Draft Environmental Impact Report
for the

Raley's Landing Project

State Clearinghouse No. 2005042083

Prepared for:

City of West Sacramento

October 2005

EDAW

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This summary is provided in accordance with Section 15123 of the California Environmental Quality Act Guidelines (State CEQA Guidelines). As stated in Section 15123(a), "an EIR shall contain a brief summary of the proposed action and its consequences. The language of the summary should be as clear and simple as reasonably practical." As required by the State CEQA Guidelines, this chapter includes (1) a summary description of the proposed project, (2) a synopsis of environmental impacts and recommended mitigation measures (Table ES-3), (3) identification of the alternatives evaluated and of the environmentally superior alternative, and (4) a discussion of the areas of controversy associated with the project.

ES.2 SUMMARY DESCRIPTION OF THE PROPOSED PROJECT

ES.2.1 PROJECT BACKGROUND

Since its incorporation in 1987, West Sacramento has grown from a small, suburban-rural community to an established city with a population of 40,206 in January 2005 (California Department of Finance 2005). Population growth in the city is projected to increase to 77,100 people by 2025 (SACOG 2001).

Before the City of West Sacramento's (City's) incorporation, land use planning in the area was the responsibility of Yolo County. Until the *City of West Sacramento General Plan* (General Plan) was adopted in 1990, the Land Use Element of the 1976 *East Yolo General Plan* and the 1982 *Southport Area Plan* constituted the interim general plan for the City (City of West Sacramento 2000). In August 1985, 2 years before the City was incorporated, the Yolo County Board of Supervisors established the West Sacramento Redevelopment Project Area. This project area included the Broderick Reuse Area, for which the board of supervisors approved the redevelopment plan in May 1986. In 1990 the City adopted its General Plan. The *Washington Specific Plan*, which addresses the area formerly identified as the Broderick Reuse Area, as well as a few acres south of West Capitol Avenue on the west side of the plan area, was adopted in 1996. In the same year, the City entered into a development agreement with the Raley's Inc. and the Teel Family Trust regarding an earlier Raley's Landing project proposal. The project area is also governed by the Redevelopment Plan for Project No. 1.

The following discussion addresses the planning documents relevant to the current Raley's Landing project proposal. See Section ES.2.3, "Project Characteristics," below, for a description of the proposed development included in the Raley's Landing project.

CITY OF WEST SACRAMENTO GENERAL PLAN

The General Plan (City of West Sacramento 2004) was adopted on May 3, 1990, and has been amended 11 times, including two minor amendments in 2005. The vision of West Sacramento described in the General Plan includes a riverfront that is a well-known regional attraction that offers a gathering point with areas for active social events as well as areas of quiet; natural opportunities to enjoy the river; a strong, vibrant, and healthy metropolitan downtown along the river that provides a world-class urban experience for workers, visitors, and a large residential population; and a powerful job center for the region that maintains its current strengths in distribution while adding significant new employment in manufacturing and office occupations. In addition, the northern half of the city, where the proposed Raley's Landing project would be located, is envisioned as a location where positive cultural and physical aspects of all areas would be emphasized, where improvements to streets and utilities will be matched by steady private upgrading of homes by residents, and where neighborhoods will retain a sense of local identity and pride, as well as serve a meaningful part of the city. West Capitol Avenue is specifically envisioned as an active and attractive mixed-use commercial and residential core.

The General Plan land use designation for the proposed Raley's Landing project site is RMU (Riverfront Mixed Use) (Exhibit 3.1-1 in Section 3.1, "Land Use and Planning"). The RMU General Plan designation provides for marinas; restaurants; retail; amusement; hotel and motel uses; midrise and high-rise offices; multifamily residential units oriented principally toward the river; public and quasi-public uses; and similar, compatible uses. All development under this designation shall be approved pursuant to a master development plan (e.g., specific plan).

WASHINGTON SPECIFIC PLAN

The *Washington Specific Plan*, adopted by the City on May 15, 1996, was prepared to guide the redevelopment and conservation of the city's Washington Plan Area (Exhibit 3.1-2 in Section 3.1, "Land Use and Planning") (City of West Sacramento 1996). The proposed Raley's Landing project site is located in the Washington Plan Area. The specific plan envisions the Washington area as the focal point for capitalizing on the Sacramento River as a regional asset. Among the links envisioned by the plan are development linking the Washington area to existing and proposed development north and south of the area to form a continuous improved riverfront development and enhancement zone; trails and commercial corridors through the area that link the West Sacramento Central Business District with the riverfront; and automobile, pedestrian, and bicycle routes that link the area with regional routes. The plan also envisions landscaped access that reunites West Sacramento's residents with the riverfront, development in the area that spurs West Sacramento's economic growth and helps to establish the city as a major force in regional economic growth, and public investments in improving the area that set the framework for increased private investment in the area as well as the rest of West Sacramento. As described in the *Washington Specific Plan*, the plan area would be developed with approximately 1,300 new residential units, a 428-room hotel, 2,509,100 square feet of new office space, and 187,000 square feet of new commercial/retail space (City of West Sacramento 1996).

REDEVELOPMENT PLAN FOR PROJECT NO. 1

The Redevelopment Plan for Project No. 1, which addresses the project site, was adopted by the Yolo County Board of Supervisors in 1986 and adopted by the City after incorporation. Although implementation plans are prepared each 5 years, the plan itself has not been amended since it was adopted. The purpose of the plan is to guide the City Redevelopment Agency in the redevelopment, rehabilitation, and revitalization of the project area. Goals set out in the plan include designing and developing areas that are stagnant; strengthening the economic base; providing adequate land for parking and open spaces; and ensuring site design standards and other design elements.

SACRAMENTO AREA COUNCIL OF GOVERNMENTS SACRAMENTO REGION BLUEPRINT

The Sacramento Region Blueprint is a transportation and land use study that was initiated by the Sacramento Area Council of Governments (SACOG) Board of Directors in 2002 to guide land use and transportation choices over the next 50 years. The Sacramento region, which includes El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties and their 22 constituent cities, is expected to add another 1.7 million people, 1 million new jobs, and 840,000 new homes by 2050. Realizing that growth would have profound impacts on the region, SACOG and civic partner Valley Vision initiated the project to study future land use patterns and their potential effects on the region's transportation system, air quality, housing, open space, and other resources.

Many public workshops and meetings with local government staff and elected officials led the SACOG Board of Directors to adopt in December 2004 the Preferred Blueprint Scenario, which represents a vision for growth that promotes compact, mixed-use development and more transit choices as an alternative to low-density development. The Sacramento Region Blueprint depicts a way for the region to grow through the year 2050 that is generally consistent with the principles of smart growth.

The blueprint is increasingly used by counties, cities, and developers as a guide for development in the region, but it is not a regulatory plan, so it has no legally binding effect on future actions.

SACRAMENTO RIVERFRONT MASTER PLAN

The *Sacramento Riverfront Master Plan* (Wallace Roberts & Todd 2003), prepared in November 2003, was prepared to update the *West Sacramento Riverfront Master Plan* and the *Sacramento Riverfront Master Plan*, both completed in 1994, and to present a new vision for the future of the Sacramento riverfront. Reflecting an unprecedented level of collaboration between the communities of Sacramento and West Sacramento, the updated *Sacramento Riverfront Master Plan* is the first plan to treat both sides of the river comprehensively. The vision for the waterfront shared by both communities is rooted in the conviction that creating a high-quality riverfront public space and surrounding it with vibrant urban neighborhoods would make a more sustainable form of urban life in which the places people work and live are close, thus reversing trends of suburbanization and resource waste. To achieve this vision, the master plan builds on four central guiding principles: creating riverfront neighborhoods and districts, establishing a web of connectivity, strengthening the green backbone of the community (i.e., expanding public open space), and making places for celebration.

PD-30 TEXT

The Yolo County Board of Supervisors adopted An Ordinance of the County of Yolo Rezoning Certain Real Property to Planned Development (referred to in this EIR as the Planned Development – 30, or PD-30 text), on May 6, 1986. The document text was amended on November 16, 1995, to address issues related to auto circulation and parking and loading area requirements. The ordinance governs the area bounded by D Street on the north, West Capitol Avenue on the south, Third Street on the west, and the riverfront on the east. Portions of the proposed project fall within this area (see Exhibit 2-2 in Chapter 2, “Description of the Proposed Project”). The purpose of creating the PD-30 zone was to encourage innovation; to stimulate new development of a mixed, high-quality nature; and to create an environment that encourages a high level of property maintenance. The rezoning encouraged the development of high-intensity hotel, residential, office, and commercial uses with public plazas in the area to take maximum advantage of the immediately adjacent riverfront. The PD-30 text identifies standards and regulations to guide development, providing specific guidance on the uses and designs allowed in the area.

RALEY’S LANDING DEVELOPMENT AGREEMENT

The Raley’s Landing Development Agreement between the City, the Raley’s Inc., and the Teel Family Trust is dated January 12, 1996, and was executed on February 1, 1996. The agreement applies to the area bounded by E Street on the north, West Capitol Avenue on the south, Third Street on the west, and the riverfront on the east. The agreement describes a mixed-use development that includes a 428-room hotel, approximately 945,000 square feet of office space, retail shops totaling approximately 46,000 square feet, 3,357 off-street parking spaces, and a 218-unit apartment building.

ES.2.2 PROJECT GOALS AND OBJECTIVES

The overarching goal of the proposed Raley’s Landing project is the orderly and systematic development of an integrated, mixed-use community that is generally consistent with the goals and policies of the General Plan and *Washington Specific Plan* and is compatible with site characteristics. In support of this overarching goal, the project applicants have developed the following objectives for the proposed project:

- to incorporate a concept of town or village centers by providing basic services within walking distance to development, as well as opportunities for employment and recreation;
- to create a mixed-use development that is a logical extension of adjacent uses, such as the existing Ziggurat office building;
- to incorporate the riverfront and city riverfront park into the project to enhance both the project and City’s goal of increasing public use and enhancing the appearance of the riverfront;

- to integrate employment opportunities with residential neighborhoods of varying unit densities throughout the project area;
- to accommodate the housing needs of future residents of West Sacramento;
- to further the goals and objectives of the City's redevelopment plan by providing a modern, technologically efficient office facility suitable for the needs of a major financial institution or other large institutional office user;
- to provide an office facility that would offer convenient access and secure parking for employees, business visitors, and members of the public and that would enhance its tenants' ability to attract and retain high-quality employees;
- to provide office facilities of sufficient size to allow one or more major users located in multiple facilities in the region to consolidate operations in one location, affording operational efficiencies; and
- to provide a prudent investment for its applicant/owner, balancing initial and long-term costs.

The City has developed the following objectives for the proposed project:

- to satisfy the requirements of the City's Inclusionary Housing Ordinance;
- to stimulate planned development along the waterfront of West Sacramento, in turn creating a more inviting and safer waterfront environment for its residents;
- to increase office and retail job opportunities in West Sacramento and the residential component that accompanies such jobs;
- to further the development goals of the *Washington Specific Plan*;
- to provide and encourage public access to the Sacramento River waterfront in the Washington Specific Plan area;
- to promote the development of aesthetically pleasing urban structures;
- to enhance the City's supply of high-quality housing that provides a range of housing opportunities available to residents from a wide range of economic levels; and
- to adequately serve the area with a range of urban services and public transit routes.

ES.2.3 PROJECT CHARACTERISTICS

LAND USES

The Raley's Landing project consists of residential, commercial, office, and open space features oriented toward the Sacramento River waterfront on the east and toward West Capitol Avenue, a major thoroughfare and entryway to West Sacramento, on the south. Under the proposed project, residences would be located near a large number of workplaces, as well as near present and future public transit systems. At buildout, the proposed project would contain approximately 900 multifamily residential units, 845,000 gross square feet of office space, 102,000 square feet of commercial/retail uses, and possibly 100–300 hotel rooms with a 7,000- to 15,000-square-foot conference center; it would provide between 4,351 and 4,651 on-site parking spaces, including surface and multilevel parking spaces. The City proposes to amend the Raley's Landing Development Agreement and PD-30 text to accommodate the proposed mixed-use development included in the Raley's Landing project and to annex the

Washington Street property (one of the project development areas described below) to the PD-30 zone so that it can share residential entitlements associated with the PD-30 zone.

The proposed project is divided into four development areas: the Washington Street property and the River 1, River 2, and River 3 areas (Exhibit 2-2 in Chapter 2, "Description of the Proposed Project"). Conceptual representations of the development proposed for these areas are presented in Exhibits 2-3 and 2-4 in Chapter 2. The fundamental design shown in the exhibits is not expected to change; however, some of the specific details presented for the structures may be changed as further progress is made on the design of the project. The project components would be incorporated into these four areas as follows.

Washington Street Property

The Washington Street property is bordered generally by G Street on the north (the portion west of Fourth Street does not extend as far north as G Street), West Capitol Avenue on the south, Fifth Street on the west, and Third Street on the east. It is a planned mixed-use area combining retail and residential uses. Development on this property would be primarily residential, with 6.9 acres proposed for development of approximately 550 multifamily residential units in two phases. At buildout, the property would have approximately 40,000 square feet (0.8 acre) of retail uses and 900–1,000 off-street parking spaces. A 20-foot setback between project buildings and the northern boundary of the property would allow emergency vehicle access.

The buildings proposed for the Washington Street property would have four levels of housing over one level of a partially submerged garage, as well as a portion of the retail space. The overall height of the development would be 65 feet. The buildings would have live-work units and townhomes along West Capitol Avenue, and the retail space would be concentrated along Third Street. The interior of the community would include amenities for the residents, including a pool, spa, private gym, recreation center, and barbeque area. The central goal of the development is to create a sense of urban neighborhood that capitalizes on events at Raley Field, River Walk Park, and the retail services and restaurants that would be located within walking distance of the development.

River 1 Area

The River 1 area is bordered by the Ziggurat on the north, Third Street on the west, the Sacramento River on the east, and the SR 275 exit for West Capitol Avenue on the south. This 4.6-acre parcel would be developed with a mixture of commercial, residential, and retail uses, including approximately 245,000 square feet of office space (1.6 acres), 42,000 square feet of retail/restaurant uses (1.2 acres), and one of the following two scenarios: 200 multifamily residential units (1.8 acres) or 150 multifamily residential units (0.3 acre) and a 100- to 300-room hotel with a 7,000- to 15,000-square-foot conference center (1.5 acres). Between 1,000 and 1,200 parking spaces would be provided in the River 1 area.

The River 1 area would be developed with three main structures over a two-story parking structure base and would be located around a central plaza. The office tower, which would be the tallest of the three structures, would be located on the west, furthest from the river. It would have approximately 18 levels, including the parking garage, and an overall height of approximately 245 feet. The second tallest structure, the north building, would serve as either an apartment/condominium tower or a hotel and conference center and would be set back from the river to protect the existing views from the Ziggurat. It would have approximately 12 levels, including the parking garage, and an overall height of approximately 145 feet. The shortest structure, the south building, would serve as an apartment/condominium complex and would be located along the southern property border, along West Capitol Avenue, so that the taller buildings would overlook it to the south and east. The south building would have approximately six levels, including the parking garage, and an overall height of approximately 72 feet.

One-story retail shops are planned at grade along Third Street. The interior of the retail spaces would front the two-level parking garage under the planned central plaza. Two to three levels of residential units are planned above the retail space and along the south portion of the garage. The retail at grade level and residential uses above would screen the parking area and create a stepped appearance, providing a change in scale along Third

Street to support the pedestrian corridor. Development in the River 1 area would include many public amenities, such as open space, landscaped areas, and access to River Walk Park.

River 2 Area

The River 2 area is bordered by the River 3 area on the north, Second Street and the existing parking garage on the west, the Sacramento River on the east, and the Ziggurat on the south. Proposed development in the 1.2-acre River 2 area includes approximately 150 multifamily residential units and structured parking for approximately 300 vehicles. The building would have approximately 17 stories and an overall height of approximately 190 feet. This development is in the preliminary conceptual design stage.

River 3 Area

The River 3 area is bordered by E Street on the north, Third Street on the west, the Sacramento River on the east, and F Street and the River 2 area on the south. Proposed development in the 5.6-acre River 3 area includes approximately 600,000 gross square feet of office space, 20,000 gross square feet of commercial space, and structured parking for 2,151 vehicles. The development would consist of a common podium of lobby and parking uses with two towers rising from the shared podium. The towers would be oriented on the eastern and western portions of the podium. The eastern portion of the development would be constructed before the western portion. Commercial and project amenity spaces would line the east, south, and west facades of the project. Specifically, a cafeteria and terrace garden, designed as a project amenities for the owner/tenant, are proposed for the east facade; the south facade would have one story of owner/tenant amenity space and a lobby on the west end; and two stories are planned for the entire west facade, along Third Street. Retail/commercial space is planned for the first story; the story above is planned for parking. The step back for the facade would be located at or below the mandated stepback height of 36 feet. At that point, the west facade would step back 20 feet before rising to its full height.

The east tower would have approximately 14 stories of office space above a five-story lobby and parking podium. Approximately 400,000 gross square feet of office space are planned, with a typical office floor of approximately 24,000 gross square feet. The parking structure would accommodate approximately 1,426 cars on four levels of covered parking and one open deck on the roof; additional surface parking might be available. The east tower would have approximately 19 stories, including the podium levels, and an overall height of approximately 300 feet.

The west tower would have approximately seven stories of office space above a four-story lobby and parking podium. (The difference in lobby heights between the eastern and western portions of the development reflects the east to west downward gradient on which the building would be constructed.) Approximately 200,000 gross square feet of office space are planned, with a typical office floor of approximately 24,000 gross square feet. The parking structure would accommodate approximately 725 cars on four levels of covered parking and one open deck on the roof. In addition, approximately 20,000 gross square feet of commercial spaces would be available along Third Street. The west building would have approximately 11 stories, including the parking structure, and an overall height of approximately 180 feet.

ACCESS, CIRCULATION, AND PARKING

Access to and through the Raley's Landing project site is provided by numerous roadways in the project vicinity. U.S. Highway 50 (U.S. 50) is the freeway facility closest to the project site, located approximately 0.75 mile south of the site. SR 275 begins east of the site as Capitol Mall in Sacramento, continues over the Tower Bridge (Exhibit 2-2 in Chapter 2, "Description of the Proposed Project"), and provides access to U.S. 50, Interstate 80 (I-80), and Jefferson Boulevard. West Capitol Avenue runs approximately from the Tower Bridge along the southern boundary of the project site to I-80, near the western city limit. Third Street runs north-south, bisecting the project site and connecting with West Capitol Avenue on the south. Access is also provided by Second and Fifth Streets and E, F, and G Streets. The I Street Bridge (Exhibit 2-2 in Chapter 2) provides a continuation of I

Street from the city of Sacramento to the west side of the Sacramento River. The roadway becomes C Street several blocks north of the project site.

Access to and circulation through the project site would be provided by this existing road network. The one proposed change to the existing roadways on the project site is that Second Street between E and F Streets would be abandoned in the River 3 area. No roadway improvements are planned as part of the project; however, a vehicle turnaround proposed for the east end of F Street would accommodate visitor dropoffs and fire access requirements for the River 3 area. The main vehicular entrance to the Washington Street property would be located on Fourth Street. Emergency vehicle access on the Washington Street property would be provided, in part, by a 20-foot setback along the northern boundary of the property. Vehicular access to the River 1 area would be provided on Third Street and potentially on West Capitol Avenue. Access to the River 2 area would be provided on Second Street. For the River 3 area, primary vehicular access (two public driveways and one service driveway) would be on E Street; an additional driveway and the primary pedestrian access would be on F Street. Both E and F Streets would provide access for emergency vehicles up to the riverfront.

As described previously, the project would provide between 4,351 and 4,651 on-site parking spaces, including surface parking and spaces in multilevel parking structures. On the Washington Street property, 900–1,000 off-street parking spaces would be used primarily to support residential uses; they also would be used to support the retail uses proposed for the site. Between 1,000 and 1,200 parking spaces would be provided in the River 1 area to support a mix of commercial, residential, and retail uses. Some of these spaces would be provided in a parking structure associated with the office tower; others would be included in the hotel or apartment/condominium buildings or both. Approximately 300 parking spaces would be developed for the 150 residential units proposed for the River 2 area. In the River 3 area, approximately 2,151 parking spaces would be provided for the office development. Most of these spaces would be provided in an on-site parking structure; however, 23 angled surface parking spaces would be located on the northern edge of the River 3 area, on the south side of E Street.

INFRASTRUCTURE

Infrastructure to serve the proposed project site would be extended from facilities already present in the immediate vicinity. A 16-inch-diameter water line parallels Third Street. Additional 4-, 6-, and 8-inch-diameter distribution lines parallel West Capitol Avenue, G Street, and Fourth Street in the vicinity of the River 1 area and the Washington Street property and parallel E Street, F Street, and Second Street in the vicinity of the River 2 and 3 areas. Project development would be served by these water lines, and no new water lines (other than short connections in existing streets) would be needed.

Sewer trunk lines in the project area range from 6- to 21-inch gravity distribution lines. A 12-inch distribution line parallels G Street, and an 8-inch line parallels Fourth Street in the vicinity of the River 1 area and the Washington Street property. Eight-inch distribution lines parallel E Street, F Street, Second Street, and Third Street in the vicinity of the River 2 and 3 areas. Project development would be served by these sewer lines, and no new sewer lines (other than short connections in existing streets) would be needed. Wastewater in West Sacramento is currently conveyed via the Jefferson Pump Station to the City of West Sacramento Wastewater Treatment Plant for treatment and disposal to the Sacramento River. The city was recently annexed to the Sacramento Regional County Sanitation District, and a pipeline is being constructed that will connect West Sacramento to the Sacramento Regional Wastewater Treatment Plant (SRWTP). If service for the city begins in 2007 as planned, wastewater from the project site would be conveyed to the SRWTP for treatment and disposal to the Sacramento River.

Stormwater in the project area drains to an existing pipe system that flows to the Second Street Pump Station, located in the Second Street parking garage. Drainage flows from the pump through a 48-inch pipe and discharges to the Sacramento River. Project development would be served by this existing pipe system and pump station, and no new drainage lines (other than short connections in existing streets) and no upgraded pump station would be needed.

Natural gas and electricity infrastructure are located in the project area to serve the Ziggurat, the parking garage, and residences. The proposed project would connect to existing infrastructure, and no new gas or electricity lines (other than short connections in existing streets) would be needed.

PROJECT CONSTRUCTION PERIOD

Construction for the entire project is expected to begin in early 2007 and be completed in early 2011. Estimates of the individual construction schedules for the four areas that make up the project site are presented in Table ES-1.

Table ES-1
Estimated Construction Schedule for the Raley's Landing Project

Area of Project Site	Begin Construction	Complete Construction
Washington Street property	Phase 1: 2007 Phase 2: 2007	Phase 1: mid-2008 Phase 2: mid-2009
River 1 area	Early 2007	Early 2009
River 2 area	2008	Early 2011
River 3 area	Early 2007	Early 2011

PROJECT APPLICANTS

The applicants for the Raley's Landing project are Raley's, Inc.; the Teel Family Trust; D/P Fourth Street, LLP (Panattoni Development); Principal Real Estate Investors; and Signature Properties.

ES.2.4 APPROVALS, ENTITLEMENTS, AND PERMITS REQUIRED

The proposed project would require the approval of the City Council. Other permits and approvals that may be required for the proposed project are identified in Table ES-2.

Table ES-2
Required Permits and Approvals

Agency	Permit or Approval
Federal	
U.S. Fish and Wildlife Service	Endangered species consultation for effects on valley elderberry longhorn beetle (VELB). As previous conservation plan for VELB may be applied.
State	
California Air Resources Board	Emissions permit
Central Valley Regional Water Quality Control Board	General construction activity stormwater permit under the National Pollutant Discharge Elimination System
	Stormwater Pollution Prevention Plan – approval of plan to control stormwater runoff during construction
	General order for construction site dewatering activities
California Department of Fish and Game	Endangered species consultation – if state-listed endangered species or their habitat is substantially affected by the proposed project

Table ES-2 Required Permits and Approvals	
Agency	Permit or Approval
Office of Historic Preservation	Decision on eligibility for listing of potentially historic resources in the California Register of Historical Resources
Reclamation Board	Encroachment permit (including review by the U.S. Army Corps of Engineers)
Local	
City of West Sacramento	Approval of building permit, grading permit, drainage plans, and other site improvements as required in the *Washington Specific Plan* and PD-30 text
West Sacramento Fire Department	Review of site design and construction plans for fire safety
Yolo/Solano Air Quality Management District	Authority to Construct Permit to Operate
Source: Compiled by EDAW 2005	

ES.2.5 INTENDED USES OF EIR

This EIR is intended to be used during consideration of the following entitlements by the City of West Sacramento:

- Raley's Landing Development Agreement modifications;
- PD-30 text modifications;
- Owner Participation Agreement changes to reflect the revised development plan, acknowledge improvements already completed, and reflect change in ownership;
- Public Facilities Agreement changes to reflect the revised development plan, acknowledge improvements already completed, and reflect change in ownership;
- design review;
- agreements regarding inclusionary housing;
- subdivision agreement;
- infrastructure agreements; and
- tree removal permits.

ES.3 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION MEASURES

Table ES-3, presented at the end of this chapter, provides a summary of the project-specific and cumulative environmental impacts of the proposed project, the level of significance of the impact before mitigation, recommended mitigation measures, and the level of significance of the impact after implementation of the mitigation measures.

The project would result in project-level significant and unavoidable adverse impacts in four areas: transportation and circulation, air quality, noise, and visual resources. In addition, the project would contribute to cumulative significant and unavoidable adverse impacts in six areas: transportation and circulation, air quality, noise, public services, public utilities, and visual resources.

ES.4 SUMMARY OF ALTERNATIVES

This EIR evaluates the following alternatives to the proposed project:

- No-Project (Existing Plans) Alternative,
- Reduced Development Alternative, and
- No-Project (No Development) Alternative

Implementing the No-Project (Existing Plans) Alternative would not reduce any of the significant and unavoidable impacts of the proposed project. It would have greater impacts than the proposed project with respect to transportation and circulation and air quality. The only environmental issue area in which this alternative would have a lesser impact would be land use and planning, and that impact relates to plan consistency, not to physical impacts on the environment.

Implementing the Reduced Development Alternative would reduce, but not to a less-than-significant level, each of the proposed project's unavoidable impacts. This alternative would still contribute to the identified significant and unavoidable impacts, but because substantially less development would occur under this alternative, its contributions would be substantially less than what would occur with the proposed project.

Implementing the No-Project (No-Development) Alternative would have the least impact on the environment; however, CEQA requires selection of an environmentally superior alternative other than the No-Project Alternative. For this reason, the Reduced Development Alternative is the environmentally superior alternative among the alternatives that may partially meet the objectives of the proposed project.

ES.5 AREAS OF CONTROVERSY

A notice of preparation/initial study (NOP/IS) for the proposed project was circulated to agencies and the public beginning on April 18, 2005, for a 30-day review period that concluded on May 18, 2005. Agency and public scoping meetings were held on April 27, 2005, at the West Sacramento Civic Center Galleria to obtain additional input on the scope and content of the DEIR. The NOP/IS and comments received on the NOP/IS are included in Appendix A of this DEIR. A number of issues that were raised are considered in this EIR.

Based on the comments received on the NOP/IS in written responses and during the scoping meetings, the principal area of controversy regarding the proposed project pertains to the increase in traffic associated with project implementation. The City of Sacramento Department of Transportation raised concerns about traffic and recommended that traffic analysis work be performed at various City of Sacramento. The department also expressed concern about "overparking"(i.e., an excessive number of parking spaces in the proposed project area, which would result in a loss of demand for and revenue generated by parking lots on the Sacramento side of the river) and suggested negotiating additional bus service by Sacramento Regional Transit. Similarly, the Yolo County Transportation District (Yolobus) asked that the scope of the EIR look into how increased bus service to the area might relieve or mitigate some of the air quality and/or traffic impacts of the proposed project. In addition, the California Department of Transportation raised concerns about the need to mitigate significant impacts of the proposed project on the state highway system, in particular the Jefferson Boulevard/U.S. 50 interchange, the U.S. 50/Business 80 interchange, the U.S. 50 mainline, and the Tower Bridge. Multiple members of the public expressed concerns regarding the project's effects on local traffic conditions during both construction and operation.

Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
3.1 Land Use			
3.1-1: Land Use and Planning — Consistency with Plans and Zoning Map. The proposed project is consistent with the land use designations and zoning identified for the project site in the General Plan, in the Washington Specific Plan, and on the City Zoning Map. The project proposal contains minor inconsistencies with the PD-30 text and Raley's Landing Development Agreement. Under the proposed project, these documents would be updated to resolve all inconsistencies between them and the project. These updates are not themselves considered environmental impacts. Therefore, this impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.1-2: Land Use and Planning — Consistency with HCP or NCCP. An HCP for Yolo County in development since 1991 is in the process of being rewritten as an NCCP. The NCCP has not been completed or approved; therefore, an evaluation of the project's consistency with this plan is not possible or required. A project-specific HCP for incidental take of valley elderberry longhorn beetle (VELB) was completed in 1997 for a previous Raley's Landing project proposal. Although incidental take authorization associated with this HCP has expired, the proposed project is consistent with this HCP. Therefore, this impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.2 Population, Employment, and Housing			
3.2-1: Population, Employment, and Housing — Population Growth and Housing Demand during Construction. The proposed project would generate a temporary increase in employment in the city of 50–70 construction jobs during the peak construction period. The number of existing construction personnel in the region is considered sufficient to meet demand associated with the proposed project; therefore, this temporary increase in	LTS	No mitigation measures are required.	LTS

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
employment is not expected to generate any substantial new population growth in the area or generate the need for substantial additional housing for construction workers. This impact is considered less than significant.			
3.2-2: Population, Employment, and Housing — Increased Population Growth. The proposed project would develop new residential units, which would result in direct increases in population. The estimated project-related increases in population would exceed planned growth anticipated in the General Plan and Washington Specific Plan. However, inconsistencies solely between planned and anticipated population growth as described here would not cause significant environmental effects. Direct impacts that would occur with development and associated population growth are evaluated in appropriate sections of this DEIR. This impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.2-3: Population, Employment, and Housing — Increased Housing Supply and Employment Opportunities. Development of the proposed project would increase the number of housing units and jobs. At full buildout, the jobs-housing index for the proposed project would be 0.40, indicating that the proposed development would be jobs rich. When considered in conjunction with related current and future residential projects in the city, overall housing opportunities in the city should increase. The project would not induce substantial new housing demand. This impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.2-4: Population, Employment, and Housing — Consistency with Housing Goals and Policies. The General Plan and the Washington Specific Plan identify various goals, policies, and implementation programs related to the provision of affordable housing and housing for people with special needs. The City's affordable	LTS	No mitigation measures are required.	LTS

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
housing ordinance identifies numeric goals associated with the provision of affordable housing in the city. The developers would coordinate with the City to ensure compliance with the City's affordable housing policy through one or more available mechanisms. This impact is considered less than significant.			
3.3 Transportation and Circulation			
3.3-1: Transportation and Circulation – Operation of LOS F at the Third Street/G Street Intersection under Existing Plus Project Conditions. Traffic added by the proposed project to existing traffic would cause the unsignalized intersection of Third Street/G Street to operate at an unacceptable LOS (LOS F). This impact is considered significant.	S	**3.3-1: Provide Funding for Improvements at the Third Street/G Street Intersection (Existing Plus Project)** Mitigation for this impact would be installation of a traffic signal at the intersection, restriping the two-way-left-turn lane north of the intersection to include a dedicated southbound left-turn lane, removing the stop signs, and adding crosswalks. No change to the ROW, curb, or gutter would be required for this improvement. These improvements shall be fully funded and implemented as described in the OPA and the Public Facilities Agreement.	LTS
3.3-2: Transportation and Circulation – Operation of LOS D at the Jefferson Boulevard/Sacramento Avenue Intersection under Existing Plus Project Conditions. Traffic added by the proposed project to existing traffic would cause the intersection at Jefferson Boulevard and Sacramento Avenue to operate at an unacceptable LOS (LOS D). This impact is considered significant.	S	**3.3-2: Provide Fair Share Funding for Improvements at the Jefferson Boulevard/Sacramento Avenue Intersection (Existing Plus Project)** Mitigation for this impact would be adding a southbound right-turn-lane. This improvement is included in an update of the City's Traffic Impact Fee Program, which will be considered by the City Council in fall 2005, and would be funded through that program. The project applicants shall pay their fair share cost of this improvement through payment of traffic impact fees to the City of West Sacramento. Because the Traffic Impact Fee Program is being updated and the project includes two development options for the River 1 area (900 residential units or 850 residential units and hotel and conference center), the specific amount of the fee that the project applicants would pay into the Traffic Impact Fee Program is uncertain. If the fees were calculated based on the current fee schedule and based on the land use square footage and the number of dwelling units identified in the current	SU

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		description of the project, the project applicants would contribute approximately $7.3–7.4 million to the City's Traffic Impact Fee Program (Pascoe, pers. comm., 2005). As stated earlier, however, the City is updating its Traffic Impact Fee Program and will be approving a new fee schedule in fall 2005. If the fees were calculated based on the fee schedule currently being considered by the City Council, the project applicants would contribute approximately $8.2–8.3 million to the Traffic Impact Fee Program (Bermudez, pers. comm., 2005). The actual amount that the Raley's Landing project applicants would pay toward the program would be determined based on the fee schedule in place as building permits are issued for each building. The fees would be calculated based on the square footage of the various land uses and the number of dwelling units identified in the ultimate submittal to the City. This mitigation measure would be implemented by the city in conjunction with the widening of Sacramento Avenue from Jefferson Boulevard to the I Street Bridge.	
3.3-3: Transportation and Circulation – Unacceptable LOS Levels on Two Third Street Roadway Segments between E Street and West Capitol Avenue under Existing Plus Project Conditions. Traffic added by the project to existing traffic would cause two segments of Third Street between West Capitol Avenue and E Street to exceed daily traffic volume thresholds for residential collector streets. This impact is considered significant.	S	**3.3-3: Provide Improvements along Third Street between E Street and West Capitol Avenue (Existing Plus Project)** Mitigation for this impact would be upgrading Third Street from its current class (residential collector) and configuration (two or three travel lanes) to an arterial street, with four travel lanes (two lanes in each direction) between West Capitol Avenue and G Street, and two travel lanes (one lane in each direction) north of G Street. This improvement would include some access limitations to driveways fronting on Third Street and raised medians to prevent left turns out of the driveways, and other operational improvements to this section of Third Street. Project access points on Third Street shall be limited to the following: ▸ one driveway on Third Street for the River 1 project area, allowing right turns in and out and left turns in from Third Street southbound;	LTS

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		▸ one driveway on Third Street for the Washington property, allowing right turns in and out; and ▸ no driveway access to Third Street for either the River 2 or River 3 areas. The project applicants shall implement the Third Street fronting improvements on the Washington Street property and in the River 1 area during project construction. The City shall be responsible for restriping Third Street.	
3.3-4: Transportation and Circulation – Unacceptable LOS Level on the Fourth Street Roadway Segment between G Street and West Capitol Avenue under Existing Plus Project Conditions. Traffic added by the project to existing traffic would cause the segment of Fourth Street between West Capitol and G Street to exceed daily traffic volume thresholds for local residential streets. This impact is considered significant.	S	**3.3-4: Provide Improvements along Fourth Street between G Street and West Capitol Avenue (Existing Plus Project)** This segment of Fourth Street would serve as a primary access roadway to the Washington Street property. The roadway shall be upgraded to a residential collector standard as part of the project. With this design, the roadway would meet daily volume thresholds. The project applicants shall implement this improvement during project construction.	LTS
3.3-5: Transportation and Circulation – Operation at Below-Standard LOS for Four City of West Sacramento Intersections under Cumulative Plus Project Conditions. Traffic added by the proposed project, along with traffic from cumulative development, will cause three currently unsignalized intersections (Third Street/E Street, Third Street/G Street, Fifth Street/G Street) to operate at an unacceptable LOS. An additional unsignalized intersection, Fifth Street/F Street, would operate at an unacceptable LOS without the proposed project, and traffic added by the project would increase average driver delays by more than 5 seconds. This impact is considered significant.	S	**3.3-5: Provide Funding for Improvements at Four City of West Sacramento Intersections (Cumulative Plus Project)** Mitigation for this impact would be signalization of the Third Street/E Street, Third Street/G Street, Fifth Street/G Street, and Fifth Street/F Street intersections and restriping of approach lanes as shown in Exhibit 3.3-10. The Raley’s Landing project applicants shall fully fund signalization of the Third Street/E Street intersection and, through a reimbursement agreement with the City, shall receive partial reimbursement from other applicants whose later development contributes traffic to the intersection. Through the reimbursement agreement, these other developers shall pay their fair share of the cost of signalization. Ultimately, the Raley’s Landing project applicants shall pay only their fair share of the cost of signalization at this intersection. As described previously for Mitigation Measure 3.3-1, the improvements at the Third Street/G Street intersection shall	LTS

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		be fully funded and implemented as described in the OPA and the Public Facilities Agreement. In accordance with the Public Facilities Agreement, the project applicants shall contribute $100,000 of the cost of signalizing the Fifth Street/G Street intersection. The remaining cost of signalization shall be funded through the Traffic Impact Fee Program, with the project applicants also paying fees into this program as appropriate. The City shall be responsible for implementing this improvement. This improvement is not currently programmed, although funds are dedicated within the Traffic Impact Fee Program for improvements to various unspecified intersections as needed. The Fifth Street/G Street intersection would fall within this category. The City shall monitor traffic volumes and delays at this location through its regular traffic engineering data collection and shall program the improvement when the signal is warranted. The Raley's Landing project applicants shall partially fund signalization of the Fifth Street/F Street intersection through payment of fair-share contributions toward the Traffic Impact Fee Program. The City shall be responsible for implementing this improvement. This improvement is not currently programmed, although funds are dedicated within the Traffic Impact Fee Program for improvements to various unspecified intersections as needed. The Fifth Street/F Street intersection would fall within this category. The City shall monitor traffic volumes and delay at this location through its regular traffic engineering data collection and shall program the improvement when the signal is warranted. Implementation of mitigation at the Third Street/G Street and Fifth Street/F Street intersections would involve payment into the Traffic Impact Fee Program. Because the Traffic Impact Fee Program is being updated and the project includes two development options for the River 1 area (900 residential units or 850 residential units and hotel and conference	

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		center), the specific amount of the fee that the project applicants would pay into the Traffic Impact Fee Program is uncertain. If the fees were calculated based on the current fee schedule and based on the land use square footage and the number of dwelling units identified in the current description of the project, the project applicants would contribute approximately $7.3–7.4 million to the City's Traffic Impact Fee Program (Pascoe, pers. comm., 2005). As stated earlier, however, the City is updating its Traffic Impact Fee Program and will be approving a new fee schedule in fall 2005. If the fees were calculated based on the fee schedule currently being considered by the City Council, the project applicants would contribute approximately $8.2–8.3 million to the Traffic Impact Fee Program (Bermudez, pers. comm., 2005). The actual amount that the Raley's Landing project applicants would pay toward the program would be determined based on the fee schedule in place as building permits are issued for each building. The fees would be calculated based on the square footage of the various land uses and the number of dwelling units identified in the ultimate submittal to the City.	
3.3-6: Transportation and Circulation – Operation at Below-Standard LOS at the Third Street/Tower Bridge Gateway Intersection under Cumulative Plus Project Conditions. The Third Street/Tower Bridge Gateway intersection would operate at an unacceptable LOS under cumulative conditions, without the addition of traffic from the proposed project. Traffic generated by the proposed project would add greater than 0.05 to the V/C ratio at this signalized intersection. This impact is considered significant.	S	**3.3-6: Reduce Vehicle Trip Generation from the Proposed Project (Cumulative Plus Project)** The Third Street/Tower Bridge Gateway intersection is included as part of the City's planned conversion of Tower Bridge Gateway from its current classification as a freeway with no at-grade intersections, to an arterial street, with three at-grade intersections. The Third Street/Tower Bridge Gateway intersection configuration and infrastructure included in the City's planned Tower Bridge Gateway conversion are the same intersection characteristics used in this analysis. There are no opportunities for further improvements to this intersection because of site constraints and other factors. Therefore, the only opportunity for the proposed Raley's Landing project to mitigate this impact is to reduce the number of trips generated by the project and,	SU

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		consequently, minimize the number of trips contributed to this intersection. This would be achieved by both minor and major office tenants as defined in the City's Transportation Systems Management (TSM) provision (Chapter 17.67). The Transportation Management Plan (TMP) shall achieve the following objectives: ► Increase public awareness and use of transportation alternatives to the single-occupant vehicle. ► Maximize and promote alternative commute modes. ► Reduce the total number of single-occupant vehicle trips associated with home-to-work and work-to-home commuting, which will result in a reduction of traffic congestion and vehicle emissions. ► Reduce present and future motor vehicle emissions as a contribution toward complying with federal and state ambient air quality standards. ► Achieve an average vehicle ridership of 1.5 persons per motor vehicle at all work sites with 100 or more employees. These objectives can be achieved and are described in detail in the TSM advisory handbook required for both minor and major employers. Discretion shall be granted to select from among a range of TSM measures. The TMP shall include a reasonable combination of implementation measures designed to achieve the goals of this chapter. TSM measures include, but are not limited to, the following: A. parking facilities: preferential parking for carpools and vanpools, perimeter or park-and-ride lots with shuttle service, restricted parking for single-occupancy vehicles; B. bicycle facilities: secured bicycle parking facilities, class I bicycle lockers, class II bicycle racks, showers and lockers; C. services: on-site sale of transit passes, shuttle services, carpool/vanpool matching services, informational and	

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		promotional programs, guaranteed ride-home program; D. subsidies: subsidies for transit passes/tickets, parking subsidies, vanpool subsidies; E. special incentives: creative incentive programs, disincentives, schedules (flextime, alternative work shifts), telecommuting; and F. other: membership in the transportation management association, employee travel allowance, reduced-emission vehicles, on-site child care facilities. Additionally, pedestrian access to and from the project areas shall be designed to maximize the convenience and comfort of project residents, employees, and visitors who walk to, from, or within the project. Internal pedestrian connections within project areas shall be provided to minimize extra walking distance within the project areas. Sidewalks shall be installed on all project fronting streets and on internal project streets. Pedestrian connections from the River 1, 2, and 3 areas and River Walk Park shall be provided. A pedestrian connection shall be provided from River 1 to Tower Bridge Gateway and the planned pedestrian walkways on Tower Bridge.	
3.3-7: Transportation and Circulation – Unacceptable LOS on Two Third Street Roadway Segments between E Street and Tower Bridge Gateway under Cumulative Plus Project Conditions. Traffic added by the proposed project along with traffic from cumulative development would cause two segments of Third Street between E Street and Tower Bridge Gateway to exceed daily traffic volume thresholds for residential collector streets. This impact is considered significant.	S	**3.3-7: Provide Improvements along Third Street between E Street and Tower Bridge Gateway (Cumulative Plus Project)** Implement Mitigation Measure 3.3-3.	LTS
3.3-8: Transportation and Circulation – Contribution of Traffic to State Highway Facilities Operating at an Unacceptable LOS under Cumulative Plus Project Conditions. Traffic generated by cumulative development	S	**3.3-8: Provide Fair-Share Funding for Interchange Improvements Included in the City's Traffic Impact Fee Program, and Reduce Vehicle Trip Generation from the Proposed Project (Cumulative Plus Project)**	SU

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
alone, without implementation of the proposed project, would cause weaving sections of I-5 and U.S. 50 to operate at an unacceptable LOS. Traffic added by the proposed project would exacerbate the unacceptable LOS at these locations. This impact is considered significant.		The City has developed improvement plans for the Jefferson Boulevard/U.S. 50 interchange, and the South River Road/U.S. 50 interchange (City of West Sacramento 1993). The City has included the cost of this improvement in its Traffic Impact Fee Program and through payment of the traffic impact fees, the project applicants would provide fair-share funding for these improvements. Because the Traffic Impact Fee Program is being updated and the project includes two development options for the River 1 area (900 residential units or 850 residential units and hotel and conference center), the specific amount of the fee that the project applicants would pay into the Traffic Impact Fee Program is uncertain. If the fees were calculated based on the current fee schedule and based on the land use square footage and the number of dwelling units identified in the current description of the project, the project applicants would contribute approximately $7.3–7.4 million to the City's Traffic Impact Fee Program (Pascoe, pers. comm., 2005). As stated earlier, however, the City is updating its Traffic Impact Fee Program and will be approving a new fee schedule in fall 2005. If the fees were calculated based on the fee schedule currently being considered by the City Council, the project applicants would contribute approximately $8.2–8.3 million to the Traffic Impact Fee Program (Bermudez, pers. comm., 2005). The actual amount that the Raley's Landing project applicants would pay toward the program would be determined based on the fee schedule in place as building permits are issued for each building. The fees would be calculated based on the square footage of the various land uses and the number of dwelling units identified in the ultimate submittal to the City. Implementation of these interchange projects would assist in improving traffic conditions on U.S. 50. The City, in conjunction with Caltrans, would be responsible for implementing this mitigation measure. The improvement is not currently programmed.	

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
3.3-9: Transportation and Circulation – Unacceptable LOS on the City of Sacramento Third Street/J Street Intersection under Existing Plus Project Conditions. Traffic generated by cumulative development alone, without implementation of the proposed project, would cause the Third Street/J Street intersection in the City of Sacramento to operate at an unacceptable LOS. Traffic added by the proposed project would increase the peak period average vehicle delay by more than 5 seconds. This impact is considered significant.	S	No mitigation is available.	SU
3.3-10: Transportation and Circulation – Operation at Below-Standard LOS for Four City of Sacramento Intersections under Cumulative Plus Project Conditions. Four study intersections in the city of Sacramento (Third Street/Capitol Mall, Third Street/J Street, Third Street/P Street, I Street/Jibboom Street) would operate at an unacceptable LOS under cumulative conditions without the proposed project. Traffic added by the project would result in additional peak-hour periods (a.m. peak or p.m. peak) experiencing unacceptable LOS at these intersections and increases in the peak period average vehicle delays of more than 5 seconds. This impact is considered significant.	S	No mitigation is available.	SU
3.4 Air Quality			
3.4-1: Air Quality – Short-Term Construction-Generated Emissions of ROG, NO_X, and PM_{10}. Construction of the proposed project would result in emissions of ROG and NO_X, precursors to ozone, which exceed the YSAQMD significance threshold. In addition, because Yolo County is currently designated as a nonattainment area for both ozone and PM_{10}, construction emissions of ozone precursors and PM_{10} would potentially result in or substantially contribute to pollutant concentrations that exceed the NAAQS and CAAQS. As a result, this impact is considered significant.	S	**3.4-1: Implement Measures to Reduce Short-Term Construction Emissions of ROG, NO_X, and PM_{10}** In accordance with YSAQMD recommendations, the City shall require contractors to implement the following measures to reduce construction emissions (O'Brien, pers. comm., 2005): (a) The project shall implement the following measures to reduce ROG, NO_X, and visible emissions from heavy-duty diesel equipment. ► The project applicants shall designate an on-site Air Quality Construction Mitigation Manager (AQCMM)	SU

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		who shall be responsible for directing compliance with mitigation measures for project construction. ► To the extent that equipment and technology are available and cost effective, the applicants shall encourage contractors to use catalyst and filtration technologies, and retrofit existing engines in construction equipment. ► All diesel-fueled engines used in the construction of the project shall use ultra-low-sulfur diesel fuel, which contains no more than 15 ppm sulfur or alternative fuels (e.g., reformulated fuels, emulsified fuels, compressed natural gas, or power with electrification). Low-sulfur diesel fuel (500 ppm sulfur content) shall be used only if evidence is obtained and maintained from the fuel supplier(s) that ultra-low-sulfur diesel fuel is infeasible. ► All construction diesel engines that have a rating of 50 horsepower (hp) or more shall meet, at a minimum, the Tier 2 California Emission Standards for Off-road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Section 2423(b)(1) unless certified by the on-site AQCMM that such an engine is not available for a particular item of equipment. In the event that a Tier 2 engine is not available for any off-road engine larger than 50 hp, that engine shall be a Tier 1 engine. If a Tier 1 engine is not available for any off-road engine larger than 50 hp, then that engine shall be a 1996 or newer engine. The AQCMM may grant relief from this requirement for an engine if compliance with this requirement is infeasible. ► To assist the AQCMM in identifying engines that comply with the above requirement over the period of project construction, all diesel-fueled engines used in the construction of the project shall have clearly	

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		visible tags issued by the AQCMM showing that the engine meets the above requirement. ► Idling time shall be minimized to 5 minutes when construction equipment is not in use, unless more time is required per engine manufacturer's specifications or for safety reasons. ► All heavy-duty equipment shall be maintained and operated according to manufacturers' specifications. (b) In addition to the measures identified above, construction operations are required to comply with all applicable YSAQMD rules and regulations: ► YSAQMD Rule 2.3 requires controlling visible emissions so they do not exceed 40% opacity for more than 3 minutes in any 1 hour. This includes all (on-road and off-road) diesel-powered equipment. ► Any open burning that requires approval and issuance of a burn permit from YSAQMD shall be performed in accordance with YSAQMD Rule 2.8, "Open Burning, General." ► Architectural coatings and solvents used at the project shall comply with YSAQMD Rule 2.14, "Architectural Coatings." ► Cutback and emulsified asphalt application shall be conducted in accordance with YSAQMD Rule 2.28, "Cutback and Emulsified Asphalt Paving Materials." ► Portable equipment must meet either YSAQMD or statewide registration or permitting standards (Rules 3.1, 3.2 and 3.3 where applicable or California Health and Safety Code Section 41753.2[b]). (c) As recommended by YSAQMD, the City shall require its construction contractor to reduce fugitive dust emission by implementing the measures listed in Tables 3.4-4 and 3.4-5.	

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
3.4-2: Air Quality – Long-Term Operational Project-Generated Emissions of ROG, NO_X, and PM_{10}. Long-term operation of the proposed project would result in emissions of ROG and NO_X that exceed YSAQMD thresholds. Furthermore, operational emissions from the proposed project would potentially conflict with or obstruct implementation of the applicable air quality plans. As a result, this impact is considered significant.	S	**3.4-2: Implement Design and Operational Measures to Reduce Long-Term Operational Emissions of ROG and NO_X** The project applicants shall implement the following mitigation measures as part of the design of the proposed project and/or during project operation. It should be noted that some of these measures are already included in the proposed project design; however, they are repeated here to allow a complete listing of both design and operational measures. ► Coordinate with the City and the local transit service provider (Yolobus) to install appropriate transit-enhancing infrastructure on the project site, such as transit shelters, benches, street lighting, route signs and displays, and/or bus turnouts/bulbs. ► Pedestrian-enhancing infrastructure shall be provided that includes sidewalks and pedestrian paths. ► Bicycle-enhancing infrastructure shall be provided that includes bikeways/paths connecting to a bikeway system, secure bicycle parking, and bicycle storage areas at employment facilities and multifamily residential developments. ► Use solar, low-emission, central, or tankless water heaters (residential and commercial), and increase wall and attic insulation that meets or exceeds Title 24 requirements (residential and commercial). ► Install ozone destruction catalysts on air conditioning systems in consultation with YSAQMD. ► Orient buildings to take advantage of solar heating and natural cooling, and use passive solar designs (residential, commercial, and industrial). ► Plant deciduous trees on the south-facing and west-facing sides of buildings.	SU

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
3.4-3: Air Quality – Increases in Local Mobile-Source CO Concentrations. Implementation of the proposed project would result in the generation of CO at nearby intersections from increased vehicular traffic on the local transportation network and at long vehicle queues at the Tower Bridge. However, the proposed project would not contribute to CO concentrations that exceed the CAAQS of 9.0 ppm for 8 hours or 20 ppm for 1 hour. Therefore, this impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.4-4: Air Quality – Exposure of Sensitive Receptors to Mobile-Source Toxic Air Contaminants. Construction and/or operational activities related to development of Raley's Landing would require use of diesel-fueled equipment and vehicles. Regular localized use of diesel trucks in some commercial areas could generate levels of diesel PM emissions that would result in the exposure of sensitive receptors to TAC emissions that exceed 10 in 1 million for the MEI to contact cancer and/or a Hazard Index of 1 for the MEI. This impact is considered potentially significant.	PS	**3.4-4: Implement Design and Operational Measures to Reduce Long-Term Exposure to TACs** The City shall ensure the following measures are included in the design and operation of the project: ► Proposed commercial/convenience land uses (e.g., loading docks) that have the potential to emit toxic air emissions shall be located as far away as feasibly possible from existing and proposed sensitive receptors in accordance with ARB's *Air Quality and Land Use Handbook* (ARB 2005d). ► Air intakes associated with the heating and cooling system for office and residential buildings shall not be located next to potential TAC-emitting locations (e.g., loading docks) in accordance with ARB's *Air Quality and Land Use Handbook* (ARB 2005d). ► The owners/tenants and operators of the proposed facilities that would host the long-term use of diesel equipment and heavy-duty trucks shall develop and implement a plan to reduce emissions, which may include such measures as scheduling such activities when nearby residential uses are the least occupied, requiring equipment to be shut off when not in use, and prohibiting heavy-trucks from idling. The plan shall be submitted to the City for review and approval before facilities that would host long-term use of diesel equipment are occupied.	LTS

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		▸ Permits shall be obtained from the YSAQMD for any diesel-powered backup generators that would be used on the project site. The following additional guidelines are recommended in ARB's *Air Quality and Land Use Handbook* (ARB 2005d) and are considered to be advisory and not regulatory: ▸ Sensitive receptors, such as residential units and day care centers, shall not be located in the same building as dry cleaning operations that use perchloroethylene. Dry cleaning operations that use perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines.	
3.5 Noise and Vibration			
3.5-1: Noise and Vibration — Short-Term Construction Noise. Construction of the proposed project would generate noise levels that exceed the standards of the City of West Sacramento Noise Ordinance and result in a noticeable increase in ambient noise levels at sensitive receptors. This impact is considered significant.	S	**3.5-1: Implement Measures to Reduce Short-Term Construction Noise** The City shall ensure that the construction contractor(s) implement the following measures during project construction: ▸ All construction vehicles or equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and acoustical shields or shrouds, in accordance with manufacturers' recommendations. The amount of noise reduction provided by feasible noise controls on heavy-duty construction equipment is shown in Table 3.5-7. ▸ Construction operations shall be limited to the hours between 7 a.m. and 7 p.m. 7 days a week. This measure would ensure that construction noise does not occur during the more sensitive evening and nighttime hours. ▸ Construction equipment and truck routes shall be arranged to minimize travel adjacent to occupied residences. For instance, construction-related traffic shall avoid the use of E Street, F Street, and Fourth Street	SU

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		(north of G Street) and shall instead focus use on West Capitol Avenue, Third Street (south of G Street), D Street, and Second Street. ► Stationary construction equipment and staging areas shall be located as far as reasonably possible from residential dwellings, adjacent office buildings, and River Walk Park along the levee. Staging areas shall be a minimum of 75 feet from residences. The best staging area locations would be the south side of the Washington Street property, near the intersection of Fourth Street and West Capitol Avenue; the southwest side of the River 1 area; the northwest side of the River 2 area; and the east side of the River 3 area. ► A temporary solid construction/noise barrier shall be erected along the northern boundary of the portion of the Washington Street property west of Fourth Street (i.e., between the project site and the immediately adjacent residences). The noise barrier shall be constructed of ¾-inch medium-density overlay plywood sheeting or other acceptable material having a surface weight of 2 pounds per square foot or greater and a demonstrated Sound Transmission Class rating of 30 or greater as defined by American Society for Testing and Materials (ASTM) Test Method E90. To avoid objectionable noise reflections, the source side of the barrier must be lined with an acoustic absorption material that has a noise reduction coefficient of 0.70 or greater, in accordance with ASTM Test Method C423. The barrier shall be of sufficient height to block the line of sight between operating construction equipment and ground-level sensitive receptors to protect outdoor residential areas and the first floor of residences. In most cases, a 7-foot wall would be sufficient to provide this level of protection. The barrier shall not contain any significant gaps at its base or face, except for site access and surveying openings. If a wall, fence, or other permanent	

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		barrier would be constructed as part of the proposed project along the portion of the project boundary in question, and this barrier would meet the criteria described above, it may function as the construction noise barrier if it is installed and completed before any other construction activities are initiated. ► To further mitigate pile-driving noise impacts, holes shall be predrilled to the maximum feasible depth (determined by soil conditions, groundwater levels, and other factors). This will reduce the number of blows required to seat the pile, and will concentrate the pile-driving activity closer to the ground where noise can be attenuated more effectively. ► A noise disturbance coordinator shall be designated by the project applicants or contractor and approved by the City, and this person's telephone number shall be conspicuously posted around the project site and in adjacent public spaces. This noise disturbance coordinator shall receive all public complaints about construction-related noise and vibration, shall be responsible for determining the cause of the complaint, and shall implement any feasible measures to be taken to alleviate the problem. All complaints and resolution of complaints shall be reported to the City weekly.	
3.5-2: Noise and Vibration — Exposure to Groundborne Vibration. Operation of heavy-duty construction equipment could temporarily generate high levels of groundborne vibration that would exceed the human response–based thresholds of the FTA. In addition, pile-driving activity could generate vibration levels that exceed Caltrans's structural damage–based thresholds at nearby existing structures. This impact is considered significant.	S	**3.5-2: Implement Design Considerations and Alternative Construction Methods to Avoid Potential Exposure of Off-Site Residential Structures to Groundborne Vibration** The City shall ensure the construction contractor(s) and/or the project applicants (as appropriate) implement measures to avoid the exposure of nearby residential structures to ground vibration levels that exceed the standards established by both CHABA and Caltrans. These measures may include, but not be limited to, the following: ► All earthmoving equipment on the construction site shall be operated as far away from vibration-sensitive sites as reasonably possible.	LTS

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		► Earthmoving and ground-impacting operations shall be phased so as not to occur simultaneously in areas close to off-site sensitive receptors. The total vibration level produced could be significantly less when each vibration source operates separately. ► To the extent feasible, project structures shall be designed so that driven piles are placed at least 100 feet from nearby residences. If pile driving is required within 100 feet of residences, sonic or vibratory pile driving, which cause substantially lower vibration levels compared with impact pile driving, shall be used. ► All measures described in Mitigation Measure 3.5-1 shall be implemented. Many of these measures would directly minimize groundborne vibration, such as limiting construction operations to the hours between 7 a.m. and 7 p.m. 7 days a week. Pile driving shall be limited to the hours between 8 a.m. and 7 p.m. on Saturdays and Sundays. Also, holes for driven piles shall be predrilled to the maximum feasible depth. This will reduce the number of blows required to seat the pile, and will concentrate the pile-driving activity closer to the ground where noise can be attenuated more effectively. In addition, impact pile driving shall be avoided where possible and, instead, drilled piles or the use of a sonic or vibratory pile driver, which causes lower vibration levels compared with impact pile driving, shall be used where geological conditions permit their use.	
3.5-3: Noise and Vibration — Stationary- and Area-Source Noise. Increases in stationary- and area-source noise associated with the proposed residential, commercial, and office land uses included in the proposed project could potentially exceed the City's standards for hourly and maximum noise levels. This impact is considered significant.	S	**3.5-3: Implement Design Measures to Reduce Stationary- and Area-Source Noise** The City shall ensure implementation of the following mitigation measures in the design and operation of the proposed project to reduce exposure of nearby existing and future planned sensitive receptors to noise levels that exceed the City's standards for nontransportation noise sources, including an hourly L_{eq} standard of 50 dBA and 70 dBA L_{max}	LTS

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		for residential land uses during daytime hours (Table 3.5-2a). ▸ Mechanical equipment (e.g., HVAC equipment, backup generators) shall be located at the farthest feasible distance from and/or be shielded from nearby existing and proposed future noise-sensitive land uses. A noise evaluation based on contractor specifications for the equipment shall be conducted to determine whether noise levels generated by the equipment would exceed 45 dBA L_{eq} at residences. If this threshold would be exceeded, the equipment shall be moved or shielded until the 45 dBA L_{eq} standard can be met. ▸ Garbage dumpsters and commercial loading and unloading areas shall be located as far as reasonably possible from existing off-site sensitive receptors, as well as from common outdoor activity areas of proposed multifamily residential buildings. They shall also be located such that buildings shield nearby residential land uses from noise generated by loading dock and garbage collection activities (e.g., subgrade). If determined necessary by the City, additional sound barriers shall be constructed at these activity sites to protect existing and planned residential uses. Feasible shielding measures shall be identified to reduce project-related noise impacts to a less-than-significant level by demonstrating compliance with the maximum allowable noise limits in the Noise Ordinance. ▸ Loading dock activity, delivery truck activity at the commercial venues, and garbage collection activity at all venues developed on the project site shall occur only during the daytime hours of 7 a.m. to 7 p.m. to prevent nighttime sleep disturbance at nearby existing and proposed residential land uses. ▸ The backup alarms on delivery vehicles (e.g., trucks and forklifts) owned or operated by the commercial venues on-site shall be equipped with sensor-based backup alarms that sound only when objects or people are present behind	

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		the vehicle, as opposed to alarms that automatically sound when a vehicle is operated in reverse.	
3.5-4: Noise and Vibration — Operational Traffic Noise. Implementation of the proposed project would contribute to an increase in traffic noise levels at nearby existing sensitive receptors. Increased traffic noise levels would not exceed the City's standards for maximum allowable noise exposure for transportation sources applicable to land uses in the Washington Specific Plan Area (Table 3.5-2c). Therefore, this impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.5-5: Noise and Vibration — Land Use Compatibility with On-Site Noise Levels. After development of the proposed project, some sensitive receptors proposed on the project site could be exposed to noise levels generated by freeway traffic and traffic on local roads and stadium events that exceed applicable noise standards. This impact is considered significant.	S	**3.5-5: Implement Design Considerations to Reduce Exposure of Proposed Sensitive Receptors to Noise Generated by Off-Site Noise Sources** The City shall ensure that the following measures are implemented, where feasible, to reduce the exposure of sensitive receptors (i.e., buildings planned within the 70 dBA CNEL/L_{dn} contours of SR 275 or the 45 dBA L_{eq} and 65 dBA L_{max} contours of the stadium) to significant noise associated with traffic and stadium events: ► A Title 24 (California Code of Regulations) acoustical analysis shall be prepared for the residential components of the project to demonstrate how interior noise levels will achieve a 45 dBA CNEL/L_{dn}. Noise control measures, such as noise walls, berms, building setbacks, and structural design features, shall be incorporated into the development project design and construction of specified sound rating for each building element to achieve an interior noise level of 45 dBA CNEL/L_{dn}. The acoustical analysis shall be provided to the City for review and approval either with, or before, the submittal of building plans. ► The project applicants shall incorporate site-specific features in the design of residential developments on the Raley's Landing project site that reduce noise exposure	SU

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		at outdoor activity areas (e.g., private balconies and common outdoor activity areas). For instance, outdoor activity areas that are part of multifamily residential developments could be located such that the building(s) serve as a sound barrier to the nearest predominant noise source. Balconies, however, shall not be outright omitted on the basis of noise exposure so long as applicable interior noise standards are achieved. ► To address stadium noise (both average hourly levels and maximum levels), including noise generated by baseball games and music concerts, the project applicants shall incorporate increased noise-attenuation features (e.g., dual-pane, sound-rated windows; mechanical air systems; exterior wall insulation) into the design of residential dwelling units to ensure that interior noise levels are below interior noise standards established by the City of West Sacramento (Table 3.5-2a). These features shall be included in the noise analysis prepared before the approval of building plans. For residential dwellings, the design features shall ensure that hourly average interior noise levels from stadium events are below 40 dBA L_{eq} during daytime hours (7 a.m. to 10 p.m.) and below 30 dBA L_{eq} during nighttime hours (10 p.m. to 7 a.m.). ► The City shall require the project applicants or building owner to disclose issues of stadium and freeway noise levels and their meaning to purchasers and/or renters before contract or title transfer for residential property on the project site.	
3.6 Public Services			
3.6-1: Public Services — Increased Demand for Fire Protection Facilities, Systems, Equipment, and Services. Development of the proposed project would result in increased demand for fire protection facilities, equipment, and services, resulting in the need for additional staff members and equipment to maintain an	S	**3.6-1: Incorporate Fire Protection and Prevention Measures into Project Planning and Design** The project applicants shall incorporate the following fire protection and prevention measures into project planning and design:	LTS

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
adequate level of service. This impact is considered significant.		► The City shall determine the appropriate level of fire protection service for the proposed new development, including service standards for comprehensive fire service as appropriate for fire prevention, suppression, inspections, and emergency medical and hazardous materials response, to which the project applicants shall adhere. ► The fire department shall review all plans and designs for consistency with fire department standards before their approval. ► All structures shall be constructed according to fire safety and structural stability standards contained in the latest adopted Uniform Fire Code and Uniform Building Code and any related high-rise regulations (Policy C.3). Emergency access shall be an integral part of the design of all public facilities (Policy I.6). For all commercial buildings, the fire department shall review all building permit applications for consistency with such standards before their approval. ► Before approval of the updated development agreement (DA) for the proposed project, the project applicants, the City, and the fire department shall complete a fire protection services funding agreement. The funding agreement shall identify the equipment needed to provide fire protection services to the proposed project. The full cost of the equipment, and the project applicants' fair share of this cost, shall be determined. Methods to fully fund the acquisition of equipment shall be identified, including fees and other mechanisms. The fire protection services funding agreement shall act as a mechanism to ensure that the project applicants pay an appropriate portion of needed funding, that the City of West Sacramento Fire Department shall provide fire protection equipment to serve the proposed project, and that the City shall ensure the measures in the plan are	

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		implemented as scheduled before occupation of project facilities. The fire protection services funding agreement shall be completed and approved by all parties before approval of the DA for the proposed project and shall be included in the DA. Funding for additional fire department personnel shall not be the responsibility of the project applicants. Sufficient funding for ongoing operations, including the cost of additional fire department personnel associated with the proposed project, would be available from property and sales taxes and from pass-through payments from the Redevelopment Agency to the general fund. ► The project applicants shall work with the City of West Sacramento Fire Department to ensure adequate access to and throughout the proposed project. Criteria for the design review process shall include safe pedestrian access, lighting, and emergency service vehicle access.	
3.6-2: Public Services — Increased Demand for Fire Flow. The proposed project would include the development of residential, commercial, and other uses that would require adequate available water flow for fire suppression (fire flow). Lack of adequate fire flow would impede the ability of the City of West Sacramento Fire Department to provide effective fire suppression at the project site. This impact is considered significant.	S	**3.6-2: Meet Minimum Fire Flow Requirements** The City shall not authorize the occupancy of any structures until the project applicants have confirmed the provision of fire flows as required by the City of West Sacramento Fire Department and the California Fire Code. Sufficient water supply and delivery infrastructure are available to provide required fire flows to the project site based on implementation of water conveyance and storage facility performance criteria included in the 2005 Water Master Plan Update for the City of West Sacramento (see Section 3.7, "Public Utilities"). Nonresidential fire flow requirements shall conform to those contained in the 2001 California Fire Code.	LTS
3.6-3: Public Services — Increased Demand for Police Protection Facilities, Services, and Equipment. Development of the proposed project would increase the demand for police protection facilities and services, resulting in the need for additional staff members and equipment to maintain an adequate level of service. This	S	**3.6-3: Incorporate Police Protection and Crime Prevention Measures into Project Planning and Design** The project applicants shall incorporate the following police protection and crime prevention measures into project planning and design: ► The City shall determine the appropriate level for police	LTS

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Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
impact is considered significant.		protection services, including the required number of officers, support staff members, and associated equipment and vehicles, to provide service to the proposed development. ► Before approval of the updated DA for the proposed project, the project applicants, the City, and the police department shall complete a police protection services funding agreement. The funding agreement shall identify the equipment needed to provide police protection services to the proposed project. The full cost of the equipment, and the project applicants' fair share of this cost, shall be determined. Methods to fully fund the acquisition of equipment shall be identified, including fees and other mechanisms. The police protection services funding agreement shall act as a mechanism to ensure that the project applicants pay an appropriate portion of needed funding, that the City of West Sacramento Police Department shall provide police protection equipment to serve the proposed project, and that the City shall ensure the measures in the plan are implemented as scheduled before occupation of project facilities. The police protection services funding agreement shall be completed and approved by all parties before approval of the DA for the proposed project and shall be included in the DA. Funding for additional police department personnel shall not be the responsibility of the project applicants. Sufficient funding for ongoing operations, including the cost of additional police department personnel associated with the proposed project, would be available from property and sales taxes and from pass-through payments from the Redevelopment Agency to the general fund. ► The project applicants shall coordinate with the City of West Sacramento Police Department during the planning stage to ensure the use of design features, such as alarms	

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		and lighting, to reduce police service demands. ► The project applicants shall provide private security service and security personnel for residential and commercial development construction sites. ► The project applicants shall work with the City of West Sacramento Police Department to ensure adequate access for security purposes to and throughout the proposed project. Criteria for the design review process shall include safe pedestrian access, lighting, and emergency service vehicle access.	
3.6-4: Public Services — Increased Demand for Public School Facilities and Services. Implementation of the proposed project would increase demand for elementary schools (K–6), middle schools (7–8), and high schools (9–12) in the WUSD service area. Elementary, middle, and high schools in the project area have sufficient available capacity to meet projected demand throughout project development. In addition, the project applicant would pay the state-mandated school impact fees to the WUSD to mitigate impacts on schools. Therefore, this impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.6-5: Public Services — Increased Demand for Recreational Facilities. The development of the proposed project would increase the number of residents and employees in the project vicinity, thereby increasing the use and potential physical deterioration of recreational facilities in the area. This impact is considered significant.	S	**3.6-5: Comply with Park Impact Fee Program Requirements** As described in the Park Impact Fee Program, the project applicants shall be required to dedicate land, dedicate improvements, pay in-lieu fees, or perform any combination of these requirements determined acceptable by the City. This mitigation measure shall be implemented in accordance with the Parks Master Plan, the City's Park Impact Fee Program, and the Capital Improvement Program. Consistent with these plans and programs, the City is planning to extend the River Walk Park northward to the I Street Bridge during 2007. The City is also designing a recreational trail from the I Street Bridge to the Broderick Boat Ramp, and a waterfront promenade from Tower Bridge through the Triangle Specific	LTS

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		Plan area. Although no specific time frame has been set to build the recreational trail to the boat ramp, the City's adopted 2005–2007 Capitol Improvement Program anticipates construction of the Riverfront Promenade during 2008. Because of the proximity to the Raley's Landing project site, existing and new park areas associated with River Walk Park and the Riverfront Promenade would be expected to directly serve demand for regional parks generated by the proposed project. Regarding neighborhood facilities, the Park Impact Fee Program is intended to ensure provision of facilities to meet new demand for neighborhood park amenities generated by the proposed project. New neighborhood park facilities may be constructed in the vicinity of the project site or other location(s) consistent with the Parks Master Plan. Given recent rapid escalation in parkland and construction costs, the City may be required to update the Park Impact Fee Program to keep pace with park development costs. The project applicants would be required to comply with program requirements applicable at the time this mitigation measure is implemented.	
3.7 Public Utilities			
3.7-1: Public Utilities — Increased Demand for Water Supply and Treatment Capacity. Implementation of the proposed project would increase demand on the existing water supply available to the City of West Sacramento and on the City's existing water treatment capacity. The City is currently capable of meeting the project demands for water supply and treatment. Therefore, this impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.7-2: Public Utilities — Increased Demand for Water Conveyance and Storage Facilities. Implementation of the proposed project would result in a need for new on-site water conveyance facilities but no off-site improvements	LTS	No mitigation measures are required.	LTS

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other than connections to existing water transmission lines in adjacent streets. On-site infrastructure would be designed per the standard specifications for the City and per the 2005 Water Master Plan Update. Therefore, this impact is considered less than significant.			
3.7-3: Public Utilities — Increased Demand for Wastewater Conveyance Facilities. Implementation of the proposed project would increase demand for wastewater conveyance facilities, but demand would not exceed existing capacity. Existing infrastructure and the Jefferson Pump Station have capacity sufficient to serve the proposed project. On-site infrastructure would be designed per the standard specifications for the City. Therefore, this impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.7-4: Public Utilities — Increased Demand for Wastewater Treatment Facilities. In the short term, implementation of the proposed project would increase demand at the City's wastewater treatment facility, but demand would not exceed existing capacity. In the long term, wastewater treatment for the city would be provided by the SRWTP. Because the proposed project would consume some of the existing excess capacity at the SRTWP, the proposed project ultimately would contribute to the need for expansion of the SRWTP. This impact is considered significant.	S	Regarding expansion of the SRWTP, mitigation of air quality impacts is the responsibility of the SRCSD and would be implemented in accordance with the certified EIR. Additional mitigation would not be feasible.	SU
3.7-5: Public Utilities — Increased Generation of Solid Waste. The proposed project would incrementally increase the amount of solid waste generated in the city. However, Yolo County Central Landfill, which would receive solid waste from the project study area, has long-term available capacity. Therefore, this impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.7-6: Public Utilities — Increased Demand for Electricity and Required Extension of Electrical Infrastructure. Implementation of the proposed project	LTS	No mitigation measures are required.	LTS

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would increase demand for electricity. PG&E is able to provide electricity to the project site, and the increase in demand for electricity would not be substantial in relation to the existing electricity consumption in PG&E's service area. Therefore, this impact is considered less than significant.			
3.7-7: Public Utilities — Increased Demand for Natural Gas and Required Extension of Natural Gas Infrastructure. Implementation of the proposed project would increase demand for natural gas. PG&E is able to provide natural gas to the project site, and the increase in demand for natural gas would not be substantial in relation to the existing natural gas consumption in PG&E's service area. Therefore, this impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.8 Geology and Soils			
3.8-1: Geology and Soils — Risks to People and Structures Caused by Strong Seismic Ground Shaking. The project site is approximately 30 miles from the nearest potentially active fault and is classified in UBC Seismic Zone 3. Project facilities would be designed in accordance with UBC seismic standards for structures located within Zone 3. However, the proposed project includes construction of one or more high-rise structures, which carry inherently greater risk of seismic hazards. This impact is considered potentially significant.	PS	**3.8-1: Implement Recommended Measures to Reduce the Potential for Exposure to Seismic Hazards** Geotechnical reports for the proposed project have been prepared (WKA 2003, 2005; Terrasearch 2005) that evaluate the potential for various geologic and seismic-related hazards. Before contract bidding for project construction, the approved project design plans and specifications, including grading and foundation plans, shall be reviewed by a soils engineer approved by the City. This review shall be completed to assess whether the recommendations in the geotechnical reports (outlined below), some of which were made for construction of six-story office buildings and associated parking lots (i.e., the recommendations in the earlier WKA report and the Terrasearch report), are sufficient for construction of the buildings and parking structures described in the final project design plans. If these measures are deemed insufficient, the geotechnical engineer shall prepare a supplemental site-specific geotechnical report with appropriate recommendations sufficient to ensure the safety	LTS

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		of project structures and site occupants. During project design and construction, all measures outlined in the geotechnical reports for the proposed project (WKA 2003, 2005; Terrasearch 2005) and, if necessary, measures included in the supplemental site-specific geotechnical report shall be implemented to ensure that project structures and site occupants are safe. Measures included in the geotechnical reports for the proposed project may be superseded or supplemented by related measures in the site-specific geotechnical report depending on project specifications at the time of construction. Measures to be implemented (which are described in detail in the geotechnical reports [WKA 2003, 2005; Terrasearch 2005]) include, but are not necessarily limited to, the following: (a) *Recommendations regarding structural foundation design*. The geotechnical reports call for deep (driven pile) foundation as the preferred option for multistory structures, such as the proposed hotel and mixed-use building in the River 1 area. If this foundation is used, all recommended measures shall be followed regarding predrilling of pile locations; use of driven, precast, prestressed concrete piles or auger cast-in-place piles with specified maximum allowable loads per pile and ultimate pile capacity; specified pile lengths; minimum spacing between piles; and minimum rated energy for the pile-driving hammer. Other options specified by Terrasearch (2005) include use of a mat slab foundation or a spread footing foundation. If used, the mat slab may be a conventionally reinforced slab or posttensioned slab. Recommendations regarding design bearing pressure, improvement of soil to support the mat slab, and accommodating lateral building loads shall be followed. The spread footing foundation requires specified measures for improvement of subgrade soil. These recommendations shall be	

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		followed if this foundation type be used. For shorter structures proposed for the River 1 area (considered two- to three-story structures by WKA [2005]), WKA (2005) calls for continuous and/or isolated spread foundations bearing at least 18 inches below lowest adjacent soil grade. Measures described in the WKA (2005) report shall be followed to ensure adequate soil bearing pressures and otherwise provide structural continuity. (b) *Observance of design and construction requirements for basement floor (garage) slabs*, retaining walls, loading dock slabs, and sidewalks and other pavement throughout the site. (c) *A load testing program* before driving of piles and/or installation of supporting structures. (d) *Construction testing and observation by a qualified soils engineer* throughout the construction period, including site clearing, grading, and excavation; fill placement; and foundation and pavement construction. (e) Observance of *minimum excavation slope requirements* and maximum slope angles for all cut-and-fill slopes. (f) *Specifications for soil excavation and engineered fill*, including excavation of former borrow pit areas within the River 1 area, moisture conditioning of fill throughout the site, and backfilling. Testing of fill used on-site must be completed by a geotechnical representative. (g) *Requirements associated with design and construction of utility trenches*, including recommendations for shoring and backfilling of trenches. (h) *Recommendations to minimize the adverse effects of shallow groundwater* on lower floors of buildings. The geotechnical reports call for a geotechnical representative to determine the need for a subdrain beneath interior slab-on-grade lower floors. Additionally, before	

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		construction, the general contractor, concrete contractor, owner, and other members of the design team should discuss potential additional measures for slab moisture protection. The preceding measures are appropriate for typical construction in the late-spring through fall months. The on-site soils likely will be saturated by rainfall in the winter and early spring months. If the construction schedule requires continued work during the wet months, the City shall consult with a qualified civil engineer and implement any additional recommendations provided, as conditions warrant.	
3.8-2: Geology and Soils — Risks to People and Structures Caused by Seismic-Related Ground Failure. Based on the underlying soil conditions in the project area and the shallowness of the groundwater table, construction of the proposed project has the potential to expose people or structures to seismic-related ground failure, including liquefaction and differential settlement. The proposed project also includes construction of one or more high-rise structures, which carry inherently greater risk related to seismic hazards. Therefore, this impact is considered potentially significant.	PS	**3.8-2: Implement Mitigation Measure 3.8-1**	LTS
3.8-3: Geology and Soils — Construction-Related Erosion Hazards. Excavation and grading of soil could result in localized erosion during project construction. Dewatering may be required during some excavation activities as a result of high groundwater levels, which could also increase the potential for construction-related erosion. Based on soil types and topography, however, soils at the project site have little erosion hazard, and required measures would be taken to protect stormwater runoff and minimize erosion during construction. This impact is considered less than significant.	LTS	No mitigation measures are required.	LTS

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3.8-4: Geology and Soils — Risks to People and Structures Resulting from Shrink-Swell Soil Conditions. Soils on portions of the project site are moderately susceptible to shrink-swell conditions. Such conditions may cause differential and cyclical foundation movements that can cause distress and damage to overlying structures. Although surface and near-surface soils on the site are generally granular and thus are considered relatively nonexpansive, the groundwater table is shallow, which enhances the potential for shrink and swell. This impact is considered potentially significant.	PS	**3.8-4: Implement Mitigation Measure 3.8-1**	LTS
3.8-5: Geology and Soils — Risk of Structural Damage Caused by Corrosive Soils. The corrosiveness of on-site soils was generally evaluated to determine whether the soils could cause damage to buried concrete slabs and foundations and buried metal pipes during the operation of the proposed project. Soils were found to be noncorrosive to buried metal and reinforced concrete. However, the engineers who performed the testing were not corrosion engineers, and the final report recommends further analysis by a corrosion engineer. This impact is considered potentially significant.	PS	**3.8-5: Obtain Additional Information Regarding Potential for Corrosive Soils and Implement Recommendations** A corrosive soils study shall be completed by a corrosion engineer for each portion of the proposed project site before the grading permit is issued for that area. The study shall be submitted to the City for review and approval before contract bidding for project construction. The study shall evaluate the potential for corrosive soils to occur at the site and shall specifically identify and address circumstances under which corrosive soils could damage underground facilities and, if needed, shall provide recommendations to prevent such damage. Recommendations included in the study shall be implemented by the project applicant. Potential methods to address corrosive soils include the use of cathodic protection or sacrificial anodes for buried metals, use of concrete with a lower water-to-cement ratio and/or sulfate-resistant concrete, and the use of Type II or Type II modified cement. Appropriate measures identified in the study shall be implemented during project construction.	LTS
3.9 Hazards and Hazardous Materials			
3.9-1: Hazards and Hazardous Materials — Use of Hazardous Materials. Implementation of the proposed project would involve the temporary storage, use, and transport of hazardous materials at the project site during	LTS	No mitigation measures are required.	LTS

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
construction activities. In addition, because the project proposes commercial uses, it is likely that some facilities (e.g., dry cleaners, photo processors) could use hazardous materials during operation. However, use of hazardous materials at the site would comply with local, state, and federal regulations. Therefore, impacts related to creation of significant hazards to the public through routine transport, storage, use, disposal, and risk of upset would not occur. Therefore, this impact is considered less than significant.			
3.9-2: Hazards and Hazardous Materials — Exposure of Construction Workers, Residents, and Others to Hazardous Materials. Implementation of the proposed project could disturb existing contaminated areas during site grading, excavation, and construction of project-related utilities and building footings, which could inadvertently expose construction workers, residents, and others, or the environment, to hazardous materials in soils, including petroleum hydrocarbons and heavy metals. Similarly, construction activities that require dewatering to maintain adequate construction conditions could intercept potentially contaminated groundwater. Therefore, this impact is considered significant.	S	**3.9-2a: Conduct On-Site Soil Management** To minimize potential exposure of construction workers and bystanders to detected lead in soil during on-site soil excavation and grading activities, the project applicants shall implement the following soil management procedures: ► A best management practices (BMP) document shall be prepared and implemented for the project. The BMP document shall be included in construction bid and contract specifications and shall focus on construction-phase management of soil and water. The project applicants shall retain the services of a qualified environmental firm to implement this program. The BMP document shall be subject to review and approval by the Yolo County EHD. ► During excavation and grading, open areas of dirt and soil stockpiles shall be either wetted or covered if fugitive dust emissions are observed. ► Construction vehicle wheels shall be brushed/cleaned as necessary to ensure that potentially contaminated soils are not incidentally tracked off-site. **3.9-2b: Conduct Soil Disposal Sampling and Profiling** To ensure that excavated soils are transported and disposed of in accordance with appropriate waste classifications, excavated soil shall be temporarily stockpiled on-site, sampled for laboratory analysis, and profiled into appropriate disposal facilities based on the analytical results. This	LTS

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		procedure may be conducted in several phases, depending on construction schedule and space/access constraints. The sampling program shall be designed to satisfy the more restrictive nonhazardous landfill sampling criteria, which is generally one four-point composite soil sample from each 500–1,000 cubic yards of excavated soil. The likely sole analysis would be for total lead, with soluble (WET) analyses to be conducted if total concentrations exceed the applicable waste criteria guidelines. The sampling program shall be subject to review and approval by the Yolo County EHD. **3.9-2c: Manage Soil Transport and Disposal** Before construction work begins, the project applicants shall obtain an EPA Hazardous Waste Generator identification number. Any excavated soil to be disposed of in a Class I facility (as determined by stockpile profile sampling) shall be transported by waste haulers with the appropriate local, state, and federal permits/licenses. Each truckload shall be accompanied by a completed Uniform Hazardous Waste Manifest, copies of which shall be sent to the appropriate regulatory agency. This approach shall be subject to review and approval by the Yolo County EHD. **3.9-2d: Conduct Waste Groundwater Management** Groundwater pumped from project excavation shall be containerized in appropriate tanks and sampled for potential site analytes of concern. Following results confirming nonhazardous classification, the water shall be disposed of or discharged in one of the following means: off-site treatment/recycling, discharge to the storm sewer under appropriate permit, discharge to the local sanitary sewer district under appropriate permit, or discharge to ground surface (i.e., for construction dust control) under approval of appropriate agencies. This approach shall be subject to review and approval by the Yolo County EHD. **3.9-2e: Prepare Hazardous Materials Contingency Plan** A hazardous materials contingency plan shall be prepared that	

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		describes the necessary actions that would be undertaken if analytes of concern are identified in groundwater pumped from project excavation and if previously unidentified hazardous substances are encountered during construction. The contingency plan shall identify evidence that could indicate potential hazardous materials contamination, including soil discoloration, suspicious odors, presence of USTs, or buried building material; include measures to protect worker safety if signs of contamination are encountered; identify sampling and analysis protocols for various substances that might be encountered (e.g., volatile organic compounds, hydrocarbons, heavy metals); and list required regulatory agency contacts if contamination is found. The project applicants shall retain the services of a qualified environmental firm to prepare the contingency plan, and the plan shall be incorporated into the construction bid and contract specifications for the project. The hazardous materials contingency plan can be included as a component of the BMP document described in Mitigation Measure 3.9-2a.	
3.10 Hydrology and Water Quality			
3.10-1: Hydrology and Water Quality — Increased Stormwater Drainage and Localized Runoff, Potentially Causing Localized Flooding. Implementation of the proposed project would result in an increase in impervious surfaces on the project site, which would lead to an increase in stormwater runoff compared to existing conditions. Although existing storm drain infrastructure is reported to be of sufficient size and capacity to accommodate the anticipated runoff, there are no BMPs currently in place to control peak rates of runoff, such as detention basins. Therefore, this impact is considered significant.	S	**3.10-1: Develop and Implement Site-Specific Stormwater Drainage Plans and Specifications** The project applicants shall develop and implement project-specific stormwater drainage plans and specifications. These plans shall be prepared in coordination with the City Department of Public Works. The stormwater drainage plans and specifications shall be approved by the City and shall be implemented as a part of the overall construction activities. The drainage plans shall include a quantitative analysis for drainage and flow control features that are necessary to avoid localized site flooding and integrate project-related stormwater drainage into the City's local drainage conveyance facilities. Potential stormwater drainage control features that could be incorporated into project plans include, but are not limited to, constructing detention basins, directing	LTS

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Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		building downspout runoff over landscaped areas, and using underground stormwater detention tanks. Drainage plans and specifications shall be submitted to the City of West Sacramento with approval plans. The City shall approve all drainage plans and specifications before the initiation of project construction.	
3.10-2: Hydrology and Water Quality — Potential for Short-Term Construction-Related Soil Erosion and Water Quality Impairment. Implementation of the proposed project could cause short-term water quality degradation associated with construction and site dewatering activities. Areas of exposed or stockpiled soils could be subject to sheet erosion during short periods of peak stormwater runoff, and excavation could require dewatering. Both of these mechanisms could carry soil and construction-related contaminants to storm drains before ultimately being discharged to the Sacramento River. This impact is considered significant.	S	**3.10-2: Obtain Authorization for Construction Activity with the Central Valley Regional Water Board and Implement Erosion and Sediment Control Measures as Required** Each general contractor involved with construction activities at the project site shall obtain authorization for construction activity from the Central Valley Regional Water Board through the NPDES stormwater general permit for construction activity. If groundwater elevations are high enough to require dewatering during excavations, general contractors also shall obtain authorization under the construction dewatering NPDES permit or waiver of discharges for dewatering discharge to land. General contractors or representative engineers shall develop and implement a SWPPP for the NPDES permit and submit the appropriate NOIs for all applicable permit processes to the regional water board before beginning construction activities. The SWPPP shall identify, at a minimum: ► the activities that may cause pollutant discharge (including sediment); ► construction BMPs, consistent with requirements of the NPDES permit, to reduce the potential for contaminated runoff, such as limiting ground-disturbing activities during the winter rainfall period, minimizing exposure of disturbed areas and soil stockpiles to rainfall, and minimizing construction work near or within drainage facilities; ► erosion and sedimentation control measures to be implemented, such as soil stabilization, mulching, silt	LTS

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		fencing, or temporary desilting basins; good housekeeping practices such as road sweeping and dust control; and diversion measures such as use of berms to prevent clear runoff from contacting disturbed areas; and ► hazardous materials spill prevention and response measure requirements, including lists of materials proposed for use, handling and storage practices, identification of spill response equipment, spill containment and cleanup procedures, and identified regulatory notification protocols and contact phone numbers to be followed in the event of a spill. All general contractors shall implement measures for construction dewatering activities that ensure that the applicable water quality standards and permit limits are maintained. All applicable NOI(s) and SWPPP(s) shall be prepared before construction is initiated, and implementation shall be ongoing through the construction phase of the project(s). All SWPPPs and plans and specifications for construction of water quality BMPs shall be submitted to the City of West Sacramento for approval. The City of West Sacramento shall inspect for compliance with SWPPP and NPDES permit measures during all construction activities.	
3.10-3: Hydrology and Water Quality — Potential Long-Term Degradation of Water Quality. Implementation of the proposed project may degrade water quality in the Sacramento River over the long term through increased deposition of pollutants generated by motor vehicle traffic at the project site and the maintenance and operation of landscaped areas. This impact is considered significant.	S	**3.10-3: Implement Long-Term Water Quality BMPs in Design and Operation of Project Drainage Facilities and Landscaped Areas** Project contractors and/or engineers shall include permanent BMPs in the design of drainage facilities and landscaped areas at the proposed project site consistent with the City of West Sacramento SWMP and regulations governing the NPDES stormwater general permit for construction activity. The design and specifications for the proposed project shall include BMPs for on-site source control and treatment to ensure that water quality is protected in the long term. Project engineers shall consult with the City when designing the drainage facilities and associated water quality protection features, and the project	LTS

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		applicants shall submit designs of the areas to the City for review and approval before the development plans are approved. The BMPs shall be designed, constructed, and maintained to meet a performance standard established in consultation with the City and shall at least meets all applicable regulations and guidelines regarding stormwater quality and discharges of stormwater to the Sacramento River. BMPs of several types may be included, such as: ▸ landscaping maintenance guidelines, ▸ parking lot sweeping requirements, ▸ roof and pavement drainage and containment, ▸ catch basins and/or infiltration trenches/pits, ▸ water/oil separators, ▸ vegetated or rock-lined swales, and ▸ water breaks.	
3.11 Biological Resources			
3.11-1: Biological Resources — Loss of Habitat or Potential Disturbance of Valley Elderberry Longhorn Beetle. Elderberry shrubs, which provide habitat for the VELB (a species federally listed as threatened), have been identified on the project site. Construction activities could result in disturbance or removal of elderberry shrubs. This impact is considered significant.	S	**3.11-1: Establish Buffers and Avoid or Compensate for Removal of Elderberry Shrubs** The following measures, which are consistent with USFWS conservation guidelines for VELB (USFWS 1999), shall be implemented to minimize and mitigate impacts on elderberry shrubs and VELB: ▸ Before project construction activities begin, the project proponents shall hire a qualified biologist to conduct a preconstruction survey of the project site for elderberry shrubs, including stem counts and other measures, in accordance with USFWS protocol guidelines (USFWS 1999). ▸ A 100-foot buffer shall be established around elderberry shrubs with stems greater than 1 inch in diameter at ground level. The buffer shall be clearly marked in the field by staking or flagging. No project activity shall occur in the buffer areas. ▸ If the no-activity buffers around elderberry shrubs are not	LTS

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		feasible, the project proponents shall consult with USFWS and may be required to obtain an incidental take permit. During this consultation, an appropriate mitigation plan would be developed and approved by USFWS. Mitigation may include, but would not necessarily be limited to, allowing reduced buffers around shrubs that could potentially be retained on-site; transplanting shrubs to a conservation area; purchasing mitigation credits at an approved mitigation bank; planting seedlings or cuttings at a ratio ranging from 1:1 to 1:6, depending on the number of stems 1 inch or larger in diameter and on whether beetle exit holes are found on the shrubs on-site; and planting native plants associated with elderberry plants at transplant and/or seedling planting sites (USFWS 1999). ► In addition to the above measures, the project applicants may consult with USFWS to determine whether the two units of VELB mitigation credit that were purchased in 1997, as required by the HCP and incidental take permit for the project completed at that time, could be used as mitigation credit toward the potential take of the additional VELB habitat that has grown on the project since 1997. Because project activities that would have affected VELB were never implemented, the project proponents, with USFWS authorization, may be able to apply the two units of VELB mitigation credit that it previously purchased as partial credit toward mitigation for impacts on VELB habitat that is present on the project site.	
3.11-2: Biological Resources — Loss or Disturbance of an Active Swainson's Hawk Nest. The proposed project site supports potential nesting habitat for Swainson's hawk (a species state listed as threatened). Large, mature trees present on the project site could provide nesting habitat for Swainson's hawk. Construction activities associated with the proposed project could result in the removal of trees with active nests and/or disturbance of nesting Swainson's	S	**3.11-2: Identify and Avoid Active Swainson's Hawk Nests** The following mitigation measures shall be implemented to minimize and mitigate impacts on active Swainson's hawk nests: ► If project construction, including tree removal, begins during the Swainson's hawk breeding season (March 1 to September 15), the project applicants shall hire a	LTS

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
hawk, potentially resulting in nest abandonment and mortality to chicks or eggs. This impact is considered significant.		qualified biologist to conduct preconstruction surveys in suitable nesting habitat within one-half mile of the project site to identify active Swainson's hawk nests. To the extent feasible, the survey shall be conducted in accordance with the guidelines provided in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). At a minimum, a survey shall be conducted within 14 days before construction activity begins. ► If no active Swainson's hawk nests are found in the survey area, a letter report documenting survey methods and findings shall be submitted by the biologist conducting the surveys to the City of West Sacramento and DFG within 1 week following completion of surveys and before ground-disturbing activities are initiated. No further mitigation for disturbance of nest sites would be required. ► If active nests are found, impacts shall be avoided by establishing appropriate buffers. No project construction activity shall commence in the buffer area for a particular nest until a qualified biologist confirms that the nest is no longer active. DFG guidelines recommend implementing one-quarter- or one-half-mile buffers, but the size of the buffer may be adjusted if a qualified biologist and DFG determine that doing so would not be likely to adversely affect the hawks using the nest. Monitoring of the nest by a qualified biologist may be required if the effectiveness of the available buffer is in question and construction activity could adversely affect the hawks using the nest.	
3.11-3: Biological Resources — Loss or Disturbance of an Active Raptor Nest. Raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code. Large, mature trees present on the project site could provide nesting habitat for raptors. Construction activities associated with the proposed project could result	S	**3.11-3: Conduct Preconstruction Surveys for Nesting Raptors, and Avoid Active Nests during Construction** The following measures shall be implemented to minimize and mitigate impacts on nesting raptors: ► If project construction activity, including tree removal, would commence during the general raptor breeding	LTS

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in the loss or disturbance of an active raptor nest. This impact is considered significant.		season (February 15 to September 15), the project applicants shall hire a qualified biologist to conduct preconstruction surveys in areas of suitable nesting habitat within 500 feet of project activity. Surveys shall be conducted within 10 days before the commencement of construction activity. ► If no active raptor nests are found in the survey area, a letter report documenting survey methods and findings shall be submitted by the biologist conducting the surveys to the City of West Sacramento within 1 week following the completion of the surveys and before ground-disturbing activities are initiated. No further mitigation for disturbance of nest sites would be required. ► If active nests are found, impacts shall be avoided by establishing appropriate buffers. No project construction activity shall commence within the buffer area of a particular nest until a qualified biologist confirms that the nest is no longer active. DFG guidelines recommend implementation of 500-foot buffers, but the size of the buffer may be adjusted if a qualified biologist and DFG determine that doing so would not be likely to adversely affect the raptor species using the nest. Monitoring of the nest by a qualified biologist may be required if the effectiveness of the available buffer is in question and construction activity could adversely affect the hawks using the nest.	
3.11-4: Biological Resources — Removal, Disturbance, or Degradation of Remnant Riparian Habitat. Construction activities associated with the proposed project would result in removal, disturbance, or degradation of the remnant riparian habitat located in the easternmost portion of the River 3 area. Riparian habitat is considered a sensitive habitat by DFG and receives protection under the California Fish and Game Code and in the General Plan. This impact is considered significant.	S	**3.11-4: Protect Riparian Habitat at the Project Site, and/or Replace Riparian Habitat at a Suitable Off-Site Location Receiving Long-Term Protection** To reduce the impact on riparian habitat, the project applicants shall implement the following measures: ► Where feasible, minimize removal of riparian vegetation, and establish the maximum setback or buffer possible between construction activities and the outer edge of the riparian habitat to be retained in the River 3 area. The	LTS

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Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		setback area shall remain fenced with temporary fencing throughout the construction period. ► Where removal of riparian habitat is necessary, the removal shall be limited to the minimum amount needed to achieve the project's objectives. ► For unavoidable removal of riparian habitat and encroachment on remaining riparian habitat, implement tree preservation and replacement measures identified in the City's Tree Preservation Ordinance (see Mitigation Measure 3.11-5). In addition, transplanting and replacement plantings of elderberry shrubs identified in Mitigation Measure 3.11-4 require planting and protection of associated native plant species, including riparian species. Planting ratios are identified for associated native species in the USFWS conservation guidelines for VELB (USFWS 1999) and range from 1:1 to 2:1 for each compensatory elderberry seedling or cutting planting.	
3.11-5: Biological Resources — Potential Direct Loss or Temporary Disturbance of Protected Trees. Implementation of the proposed project could result in the direct loss or temporary disturbance of landmark, heritage, or street trees that qualify for protection under the City's Municipal Code. This impact is considered significant.	S	**3.11-5: Avoid or Protect Landmark, Heritage, and Street Trees on the Project Site Where Possible, and Obtain Tree Removal Permit for Those Trees That Cannot Be Avoided** The following measures are consistent with the City's Tree Preservation Ordinance and are designed to minimize and mitigate impacts on protected trees on the project site: ► The project applicants shall contact the City tree administrator to discuss proposed activities (i.e., pruning, potential cutting of roots, tree removal) that may affect a landmark, heritage, or street tree and, if deemed necessary, the tree administrator will inspect the site of the proposed activity. After initial consultation between the applicants and the tree administrator, the tree administrator shall confirm whether a permit is required. If it is determined that a permit is required, the applicants shall apply for a permit. The application shall include the information described in	LTS

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		Ordinance 8.24.080 and shall be signed by the property owners and their authorized agents. See Appendix G for more details regarding the contents of the application. ► The project applicants shall submit, along with their application for project development, a detailed tree plan. The tree plan shall contain the information detailed in Ordinance 8.24.090, including a contour map showing the location, size, species, and condition of all trees located on the property proposed for development; identification of the trees proposed to be preserved and those heritage, landmark, and street trees proposed to be removed and the reason for their removal; description of the measures to be followed to ensure survival of heritage, landmark, and street trees during construction; a program for the preservation of these trees during and after completion of the project; and a program for the replacement of any trees proposed to be removed. See Appendix G for more details regarding these requirements. ► Protected trees shall be retained to the extent feasible, possibly in conjunction with mitigation for remnant riparian habitat identified in Mitigation Measure 3.11-4. Setbacks adequate to allow the continued health and survival of the tree shall be provided around the base of all trees to be retained, and grading, construction, and creation of impervious surfaces shall be prohibited within the dripline. ► The project applicants shall implement the required replacement plantings and any other mitigation measures deemed necessary to compensate for the impact at a site deemed appropriate by the City in accordance with its Tree Preservation Ordinance. This activity may be taken in conjunction with any tree plantings conducted as part of Mitigation Measure 3.11-4, described above. ► Any newly planted replacement trees required by the permit shall be monitored by a qualified biologist for 3	

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		years following planting to ensure an adequate survival rate, and reports on the monitoring result shall be submitted to the City annually. In accordance with the City's Tree Preservation Ordinance, the project applicants shall be responsible for replacing any replacement trees that die within 3 years of the initial planting. Trees planted in conjunction with VELB mitigation identified in Mitigation Measure 3.11-4 shall be monitored in compliance with USFWS conservation guidelines for VELB (USFWS 1999).	
3.12 Visual Resources			
3.12-1: Visual Resources — Impacts on a Scenic Vista. No views on or near the proposed project site are considered scenic vistas. Therefore, development of the proposed project would not alter or obscure a scenic vista. This impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.12-2: Visual Resources — Damage to Scenic Resources within a State Scenic Highway. The proposed project would not damage scenic resources and is not visible from a state-designated scenic highway. Therefore, this impact is considered less than significant.	LTS	No mitigation measures are required.	LTS
3.12-3: Visual Resources — Degradation of Visual Character. Implementation of the proposed project would substantially alter the visual character of the project site through conversion of undeveloped land to developed urban uses. Assessment of visual quality is a subjective matter, and reasonable people can disagree as to whether such an alteration in the visual character of the project site would be considered a substantial degradation of the visual character. For this analysis, a conservative approach is taken, and the impact on the visual character of the project site is considered significant.	S	**3.12-3: Implement Measures to Reduce Impacts on Visual Quality** The General Plan, West Sacramento Zoning Ordinance, PD-30 text, and *Washington Specific Plan* identify various policies and guidelines that would reduce impacts on visual quality associated with project implementation. Compliance with these policies and guidelines would be ensured, in part, through compliance with the design review process. These guidelines are basic principles that would reduce visual resource impacts; however, the following mitigation measures are more specific and would further reduce the project's impacts on the visual quality and character of the project site:	SU

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		► Where feasible and consistent with project objectives, retain trees currently on the project site and incorporate them into the project design and landscaping plan. Also see Mitigation Measure 3.11-5, related to preservation of trees and compensation for necessary tree removal. ► Design major streets with a consistent landscape theme, and site appropriate shade trees to form a canopy across roadways. ► Plant strips between curb and separated sidewalks along the city's roadways. Make strips wide enough to accommodate shade trees. ► During the City's design review process, ensure development associated with the Raley's Landing project is compatible with existing and planned future neighboring projects (where details are known), particularly where those projects are keeping with the City's vision. Determinations of compatibility should be based on massing and scale of structures, building siting and orientation, architectural character, landscaping language, and other features that help to define the site. ► Use strong form, massing, and authentic detailing to express styles, rather than "paste-on" details and superficial exterior detailing. ► Create compatibility and consistency for all exterior light fixtures that are affixed to the structures. The light fixtures shall be compatible with the architectural style of the structure. ► Use building colors that are mainly subtle, neutral, or muted earth tones. Where accent colors are used, ensure they do not dominate the visual character of the building exterior and cover only limited features on building surfaces, such as trim or moulding. The use of highly reflective or glossy materials shall be limited and is not appropriate in most contexts.	

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		▸ Design screening devices, site walls, enclosed services, loading, and refuse areas to be an integral part of the building architecture.	
3.12-4: Visual Resources — Impacts from Lighting. The proposed project would involve the lighting of new development and the introduction of reflective surfaces that would inadvertently create light and glare that could affect motorists on nearby roadways and residents on adjacent properties. In addition, the degree of darkness in West Sacramento and on the proposed project site would diminish as a result of development, effectively obscuring views of stars, constellations, and other features of the night sky. Implementation of lighting guidelines identified in the General Plan, West Sacramento Zoning Ordinance, PD-30 text, and Washington Specific Plan would substantially reduce the potential level of light generated by the proposed project, thereby minimizing the potential for these effects. However, there remains the potential for the proposed project to generate substantial light and glare that would adversely affect daytime and nighttime views in the area. This impact is considered significant.	S	**3.12-4: Implement Measures to Reduce Light and Glare** The General Plan, West Sacramento Zoning Ordinance, PD-30 text, and *Washington Specific Plan* identify various policies and guidelines that would reduce impacts related to light and glare. The mitigation actions listed below build on these guidelines and would further reduce the potential for the proposed project to generate substantial light and glare that could adversely affect daytime and nighttime views: ▸ Exterior building materials shall be composed of a minimum of 50% low-reflectance, nonpolished finishes. ▸ Highly reflective mirrored glass walls shall not be used as the primary building material for façades. Where glass surfaces larger than standard windows appropriate for the land use are installed, glass with low-emittance (Low-E) coating shall be used to reduce the reflective qualities of the building, while maintaining energy efficiency. ▸ Bare metallic surfaces, such as those of pipes, flashing, vents, and light standards, shall not be polished but shall be painted or otherwise colored and have a brushed, matte, or similar finish to minimize reflectance. ▸ The use of harsh mercury vapor or low-pressure sodium bulbs is prohibited. ▸ Outdoor light fixtures shall have light sources that are aimed downward to minimize the potential for lighting to affect views of the night sky.	LTS
3.12-5: Visual Resources — Shadow Effects. Because of the height of the proposed buildings, implementation of the project could create additional shadowing on residential or public spaces. In most instances, shadows generated by the proposed project would not fall on any particular area for a substantial portion of the day. In	S	**3.12-5: Implement Measures to Reduce Shadows Cast by the Washington Street Property** Preventing shadows cast by structures associated with the Washington Street property from shading residences immediately to the north for a substantial portion of the day would require significant alterations of the project design.	SU

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addition, many of the areas that would be affected by project-generated shadows are currently shaded by large canopy trees. However, shadow simulations indicate that during portions of the year, shadows cast by structures associated with the Washington Street property would shade homes to the north of the property during a substantial portion of the day. Therefore, this impact is considered significant.		Because of the proximity of the homes, both the height of the structures along the northern edge of the Washington Street property would need to be reduced and these structures would need to be moved to the south to reduce the impact to less-than-significant levels. Given the limited size of the project parcels, such a design modification could significantly reduce the number of housing units and availability of retail space on the property. Based on conversations with the project applicant, such reductions in project density would result in development costs exceeding revenue generation potential, resulting in the project becoming economically infeasible (Nybo, pers. comm., 2005). Another approach to minimizing shadow effects would be to consolidate the structures proposed in the northern portion of each half the site (east and west of Fourth Street) into a single tall tower. Although taller towers would cast longer shadows, thereby potentially affecting additional homes to the north, a single shadow would be produced by each tower that would move from west to east as the sun moved across the sky, resulting in no particular area being shaded by project structures for a substantial portion of the day. However, construction of such towers would be substantially more costly than the proposed project configuration. As building height increases, the cost of constructing each floor also increases. Under this scenario, development costs would again exceed revenue generation potential, resulting in the project becoming economically infeasible (Nybo, pers. comm., 2005).	
3.13 Cultural Resources			
3.13-1: Cultural Resources — Destruction of or Damage to Known Cultural Resources. Development of the project would result in impacts on the location and remains of the California Transportation Company Ship Building Yard. This impact would be significant.	S	**3.13-1: Conduct Intensive Archaeological Monitoring at the Site of the California Transportation Company Shipyard, and Implement Recovery Plan, if Needed** During all ground-disturbing activities in the River 3 area east of Second Street, monitoring shall be conducted by two qualified professional archaeologists. If potentially significant	LTS

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		materials are uncovered, all ground-disturbing activities in the area of the find must cease. The area in which the work must stop shall be the minimum area necessary to ensure protection of the find, as determined by the archaeologists. The archaeologists shall determine the extent, character, and potential significance of the find and, and in cooperation with the City shall, develop appropriate mitigation intended to recover and document the encountered materials. Additional mitigation could include but not necessarily be limited to photodocumentation, additional archival research, subsurface testing, and archaeological excavation.	
3.13-2: Cultural Resources — Destruction of or Damage to Identified NRHP Properties. Development of the proposed project would not directly affect NRHP properties but would alter the current setting in the vicinity of these properties or their NRHP status. This impact would be less than significant.	LTS	No mitigation measures are required.	LTS
3.13-3: Cultural Resources — Destruction of or Damage to As-Yet-Undiscovered Archaeological Resources. Development of the proposed project could involve grading and excavation to a depth of several meters, which has the potential to disturb or damage any as-yet-undiscovered archaeological resources. This impact is considered potentially significant.	PS	**3.13-3: Monitor Excavations and Stop Work if Cultural Resources Are Discovered during Construction Activities, and Implement Recovery Plan, if Needed** (a) Qualified professional archaeologist(s) shall be on-site to monitor all significant ground-disturbing activities. Significant ground-disturbing activities are defined as those affecting soils and sediments below 1 foot in depth on all properties on the project site. Such activities can include, but are not necessarily limited to, trench and basement excavation and grading. Pile driving, soil compaction, repeated working of soils previously disturbed by project-related tasks, or filling activities do not need to be monitored. Construction personnel must be provided adequate training by a qualified professional archaeologist in the methods to be followed if subsurface archaeological deposits and suspected human remains are discovered. Training would involve meeting with the construction crew before ground-disturbing activities	LTS

Notes: LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		begin, describing what cultural resources could be encountered, and instructing the members of the crew to contact a monitor if cultural resources are discovered. Monitoring intensity may vary based on the sensitivity of the project area. A single archaeological monitor will be sufficient to monitor all significant ground-disturbing activities in the River 1 area. The same is true for the River 2 area; however, more intensive monitoring shall be conducted in the River 3 area east of Second Street, as described for Mitigation Measure 3.13-1, because of the presence of known archaeological materials. Similarly intensive monitoring involving one monitor per active machine will be necessary in the northern one-third of the Washington Street property east of Fourth Street, in the vicinity of where previous ground-disturbing activities have uncovered human remains. A single monitor will be sufficient for the remainder of the Washington Street property. In the portion of the River 3 area west of Second Street, one archaeological monitor shall monitor no more than two active earth-moving machines because of the presence of a potentially historically important soil stratum that may contain or cover significant historic-era remains west of Second Street in the River 3 area. (b) If subsurface prehistoric or historical archaeological remains are identified during construction, work within the vicinity of the affected areas must stop until the find can be evaluated by a qualified archaeologist (which may be the on-site monitor, depending on the technical specialty of the monitor). The area in which the work must stop shall be the minimum area necessary to ensure protection of the find, as determined by the archaeologist. If the find is determined to be potentially significant according to CEQA standards, an appropriate treatment plan must be developed and implemented to mitigate adverse effects, and any excavated materials should be	

Notes: LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		donated to an appropriate museum or cultural center. An appropriate treatment plan could include but not necessarily be limited to photodocumentation, additional archival research, subsurface testing, and archaeological excavation.	
3.13-4: Cultural Resources —Discovery of Human Remains. Development of the proposed project has the potential to disturb isolated human remains. This impact is considered potentially significant.	PS	**3.13-4: Stop Work if Human Remains are Uncovered during Construction.** California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are described in California Health and Safety Code Section 7050.5 and Section 7052 and California Public Resources Code Section 5097. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all such activities in the vicinity of the find shall be halted immediately and the agency or the agency's designated representative (in this case, the City or the City's designated representative) shall be notified. The area in which the work must stop shall be the minimum area necessary to ensure protection of the find, as determined by the archaeologist. The City or the archaeological monitor shall immediately notify the county coroner. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by telephone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The responsibilities of the City for acting upon notification of a discovery of Native American human remains are identified in detail in the California Public Resources Code Section 5097.9. The City or its appointed representative and the professional archaeologist will consult	LTS

Notes: LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts, Mitigation Measures, and Alternatives

Impact	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		with a Most Likely Descendent (MLD), determined by the NAHC, regarding the removal or preservation and avoidance of the remains and determine whether additional burials could be present in the vicinity.	

Notes: LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable

1 INTRODUCTION

1.1 OVERVIEW

The proposed Raley's Landing project is a mixed-use development that would occupy approximately 18.2 acres in West Sacramento bordered by the Sacramento River on the east; Fifth, Fourth, and Third Streets on the west; West Capitol Avenue on the south; and E and G Streets on the north. It consists of residential, commercial, office, and open space features oriented toward the Sacramento River waterfront and toward West Capitol Avenue, a major thoroughfare and entryway to West Sacramento.

At buildout, the proposed project would contain approximately 900 multifamily residential units, 845,000 gross square feet of office space, 102,000 square feet of commercial/retail uses, and possibly 100–300 hotel rooms with a 7,000- to 15,000-square-foot conference center; it would provide between 4,351 and 4,651 on-site parking spaces, including surface and multilevel parking spaces. The project is similar in type, size, and location to a mixed-use development project, also known as the Raley's Landing project, that was approved by Yolo County (County) nearly 20 years ago. The development agreement prepared for the previous project was executed in 1996.

The project is divided into four development areas: the Washington Street property and the River 1, River 2, and River 3 areas. The Washington Street property is currently located in the Planned Development Ordinance – 43 (PD-43) zone (associated with the Washington Specific Plan); the River 1, 2, and 3 areas are located in the PD-30 zone established by the County nearly 20 years ago in anticipation of high-density, mixed-use development along this portion of the Sacramento River.

Relative to the Washington Street property, one action to be undertaken by the City of West Sacramento (City) would be to annex the Washington Street property to the PD-30 zone so that it can share residential entitlements associated with the PD-30 zone. As part of the project, the City also would approve revisions to the Raley's Landing Development Agreement and PD-30 text. The revisions would include all the necessary site-specific minor deviations from the *Washington Specific Plan* and modifications to the PD-30 zone to accommodate the proposed project. A separate development agreement for the Washington Street property also would be prepared. In addition, the City Redevelopment Agency plans to approve a revised Owner Participation Agreement and Public Facilities Agreement for the property in support of this project.

This draft environmental impact report (DEIR) evaluates the potential impacts of the proposed project, including effects associated with project development and the effects of approval of necessary entitlements.

1.2 PURPOSE OF THE EIR

The City has prepared this DEIR to provide responsible and trustee agencies and the public with information about the potential environmental effects of implementing the proposed project. This DEIR has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 et seq.).

PRC Section 21151(a) specifies that a local agency must prepare an environmental impact report (EIR) on any project that it proposes to carry out or approve that may have a significant impact on the environment. An EIR is a public information document in which the environmental effects of a project are evaluated, feasible measures to mitigate significant impacts are identified, and alternatives to the project that can reduce or avoid significant impacts are discussed. CEQA defines a "project" as any activity directly undertaken by a public agency that "may cause either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment" (PRC Section 21065).

The purpose of an EIR is not to recommend either approval or denial of a project. An EIR is an informational document used in the planning and decision-making process by the lead agency and responsible and trustee agencies. It assists decision makers in fulfilling CEQA's requirement that they balance the benefits of a proposed project against its environmental effects in deciding whether to carry out a project. If adverse environmental effects are identified as significant and unavoidable, the proposed project still may be approved by the lead agency if it believes that the social, economic, or other benefits outweigh the unavoidable impacts. The lead agency would then prepare Findings of Fact and a Statement of Overriding Considerations that discuss the specific reasons for approving the project, based on information in the EIR and other information in the record.

The overall purpose of this EIR is to fulfill the following CEQA objectives:

- identify the project's significant effects on the environment,
- indicate the manner in which these significant effects can be mitigated or avoided,
- identify alternatives to the project,
- facilitate public involvement, and
- foster coordination among various governmental agencies.

1.3 LEAD, RESPONSIBLE, TRUSTEE, AND FEDERAL AGENCIES

1.3.1 LEAD AGENCY

Under CEQA, the lead agency is the public agency with primary responsibility over the proposed project. In accordance with State CEQA Guidelines Section 15051(b)(1), "the lead agency will normally be the agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose."

For the proposed Raley's Landing project, the City of West Sacramento is serving as the lead agency for CEQA compliance and will coordinate extensively with responsible and trustee agencies. As lead agency under CEQA, the City is principally responsible for conducting the environmental review process, including scoping, preparing appropriate environmental documentation, and responding to comments. Following completion of the EIR, the West Sacramento Planning Commission and City Council will decide whether to certify the EIR and approve the proposed project.

1.3.2 RESPONSIBLE AGENCIES

Responsible agencies are state and local public agencies other than the lead agency that have some authority to carry out or approve a project or that are required to approve a portion of the project for which a lead agency is preparing or has prepared an EIR or initial study/negative declaration. The following agencies are identified as those that would potentially act as responsible agencies regarding the proposed Raley's Landing project:

- California Air Resources Board,
- California Department of Fish and Game,
- Central Valley Regional Water Quality Control Board,
- Office of Historic Preservation,
- Reclamation Board,
- West Sacramento Redevelopment Agency, and
- Yolo-Solano Air Quality Management District.

1.3.3 TRUSTEE AGENCIES

Trustee agencies under CEQA are designated public agencies with legal jurisdiction over natural resources that are held in trust for the people of California and that would be affected by a project, whether or not the agencies have authority to approve or implement the project. The California Department of Fish and Game is the trustee agency that has been identified with potential jurisdiction over the Raley's Landing project.

1.3.4 FEDERAL AGENCIES

The U.S. Fish and Wildlife Service would not serve as either a responsible or a trustee agency under CEQA for the proposed project, but it would have permitting authority over the project.

1.4 SCOPE OF THIS EIR

Under CEQA (PRC Section 21002.1) and the State CEQA Guidelines (CCR Section 15143), a lead agency may limit an EIR's discussion of environmental effects to those effects that are considered potentially significant. The scope of this DEIR was developed based on a preliminary analysis of the proposed project; the analysis included in previous environmental documents, including the Washington Specific Plan EIR and the City of West Sacramento General Plan EIR; and public and agency comments received during the public scoping period.
A notice of preparation/initial study (NOP/IS) for the proposed project was circulated to agencies and the public beginning on April 18, 2005, for a 30-day review period that concluded on May 18, 2005. Agency and public scoping meetings were held on April 27, 2005, at the West Sacramento Civic Center Galleria to obtain additional input on the scope and content of the DEIR. Comments received on the NOP/IS are included in Appendix A of this DEIR.

As a result of the review of existing information and the scoping process, it was determined that the following resource areas, in addition to the CEQA-mandated issues (e.g., cumulative impacts, growth-inducing impacts, significant and unavoidable impacts), would be evaluated fully in this DEIR:

- land use and planning;
- population, employment, and housing;
- transportation and circulation;
- air quality;
- noise and vibration;
- public services;
- public utilities;
- geology and soils;
- hazards and hazardous materials;
- hydrology and water quality;
- biological resources;
- visual resources; and
- cultural resources.

Impacts on agricultural resources are not addressed in this DEIR. The Raley's Landing project is proposed in an urbanized area of West Sacramento that has historically supported various residential, commercial, and industrial uses. The project site does not include areas designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on maps prepared under the Farmland Mapping and Monitoring Program, and it does not include lands under Williamson Act contracts. For these reasons, the project would have no impact on agricultural resources.

1.5 ORGANIZATION OF THIS DEIR

This DEIR is organized into the following chapters:

- The **Executive Summary** summarizes the public review process, provides a brief overview of the project description, and describes the project alternatives. The Executive Summary also includes a table that identifies the significance of the project's environmental effects before and after mitigation and identifies the mitigation measures proposed to avoid, reduce to less-than-significant levels, or eliminate those impacts.

- **Chapter 1, "Introduction,"** provides an overview of the proposed project; describes the purpose of the EIR; identifies lead, responsible, trustee, and federal agencies; discusses the focus of the EIR; outlines the chapters of the EIR; and provides information on the public review process for the proposed project.

- **Chapter 2, "Description of the Proposed Project,"** identifies the project location, background and need, objectives, and characteristics. It also lists the permits and approvals anticipated to be required to implement the project.

- **Chapter 3, "Environmental Setting, Impacts, and Mitigation Measures,"** is divided by environmental issue into 13 sections. For each environmental issue (e.g., land use and planning, transportation and circulation), the section describes the existing environmental setting (i.e., baseline conditions) and regulatory framework, presents thresholds for determining the significance of impacts, evaluates the environmental impacts associated with the project, identifies mitigation for any potentially significant impacts, and identifies the level of significance following implementation of the mitigation.

- **Chapter 4, "Alternatives Analysis,"** describes alternatives to the proposed project, including the No-Project Alternative, and identifies the environmentally superior alternative. Alternatives that have been proposed and rejected from further consideration are also identified in the chapter, along with an explanation of the reasons for their rejection.

- **Chapter 5, "Cumulative Impacts,"** discusses cumulative impacts that could result from implementation of the proposed project in combination with other past, present, and reasonably foreseeable future projects in the area.

- **Chapter 6, "Growth-Inducing Impacts,"** discusses the potential for the proposed project to induce growth in the project area.

- **Chapter 7, "Significant and Unavoidable Impacts and Significant and Irreversible Environmental Impacts,"** discloses the significant and unavoidable impacts identified in the environmental impact analysis and describes the potential for the project to result in significant and irreversible environmental impacts.

- **Chapter 8, "References,"** identifies published references and other sources of information used to prepare the EIR, including agencies and individuals consulted during the EIR preparation process and Web resources.

- **Chapter 9, "Preparers of the Environmental Document,"** identifies the persons involved with preparation of this EIR.

- **Chapter 10, "List of Acronyms and Other Abbreviations,"** provides the reader with definitions of all the acronyms and other abbreviations used in this DEIR.

- The **appendices** contain the NOP/IS and comments received on the NOP/IS (Appendix A) and technical information used to prepare the environmental impact analysis.

1.6 PUBLIC REVIEW PROCESS

This DEIR is being circulated to local, state, and federal agencies involved with the project and is being made available to interested organizations and individuals who may wish to review and comment on the report. The 45-day public review period begins on October 21, 2005, and ends on December 6, 2005. During that period, written comments on the environmental document may be sent to the City of West Sacramento Community Development Department at the following address:

Mr. Jim Bermudez
City of West Sacramento
Community Development Department
1110 West Capitol Avenue
West Sacramento, CA 95691
email: jim.bermudez@ci.west-sacramento.ca.us

Copies of the DEIR can be reviewed at the following locations:

City of West Sacramento
Community Development Department
1110 West Capitol Avenue, Second Floor
West Sacramento, CA
916/617-4645

Arthur F. Turner Branch Library
1212 Merkley Avenue
West Sacramento, CA
916/375-6465

Library hours:
Monday: noon to 8:00 p.m.
Tuesday through Thursday: 11:00 a.m. to 8:00 p.m.
Friday and Saturday: 10:00 a.m. to 5:30 p.m.

Agency representatives and interested individuals also may attend a public meeting to provide comments on the contents of the DEIR. The public meeting will be held on November 17, 2005, at the West Sacramento Civic Center Galleria, 1110 West Capitol Avenue in West Sacramento. It will begin at 6:00 p.m. and end when final comments are received.

Following receipt of comments and the close of the public comment period, the City will prepare a final EIR (FEIR) that presents responses to comments on the DEIR. Proposed responses to comments will be circulated to public agencies for a 10-day review period. Public hearings on the FEIR will be held by the West Sacramento Planning Commission and by the City Council at the location identified above. The Planning Commission hearing is anticipated to be held on January 5, 2006, and regular meetings of the City Council and West Sacramento Redevelopment Agency are planned for February 1, 2006. Public comments on the FEIR will be accepted at these hearings before the City decides whether to certify the EIR and approve the proposed project.

2 DESCRIPTION OF THE PROPOSED PROJECT

2.1 PROJECT LOCATION

The proposed Raley's Landing project site is located on approximately 18.2 acres of undeveloped land in the northeastern portion of the city of West Sacramento, Yolo County, California (Exhibit 2-1). The site comprises four areas identified as the Washington Street property and the River 1, River 2, and River 3 areas (Exhibit 2-2). Of these four areas, only the Washington Street property is currently in use; it is leased to the River Cats, a minor league baseball team, for parking for events at Raley Field. The River 1, 2, and 3 areas all consist of vacant land with no structures. The proposed Raley's Landing project site as a whole is bordered by E and G Streets on the north; Fifth, Fourth, and Third Streets on the west; the Sacramento River on the east; and West Capitol Avenue on the south.

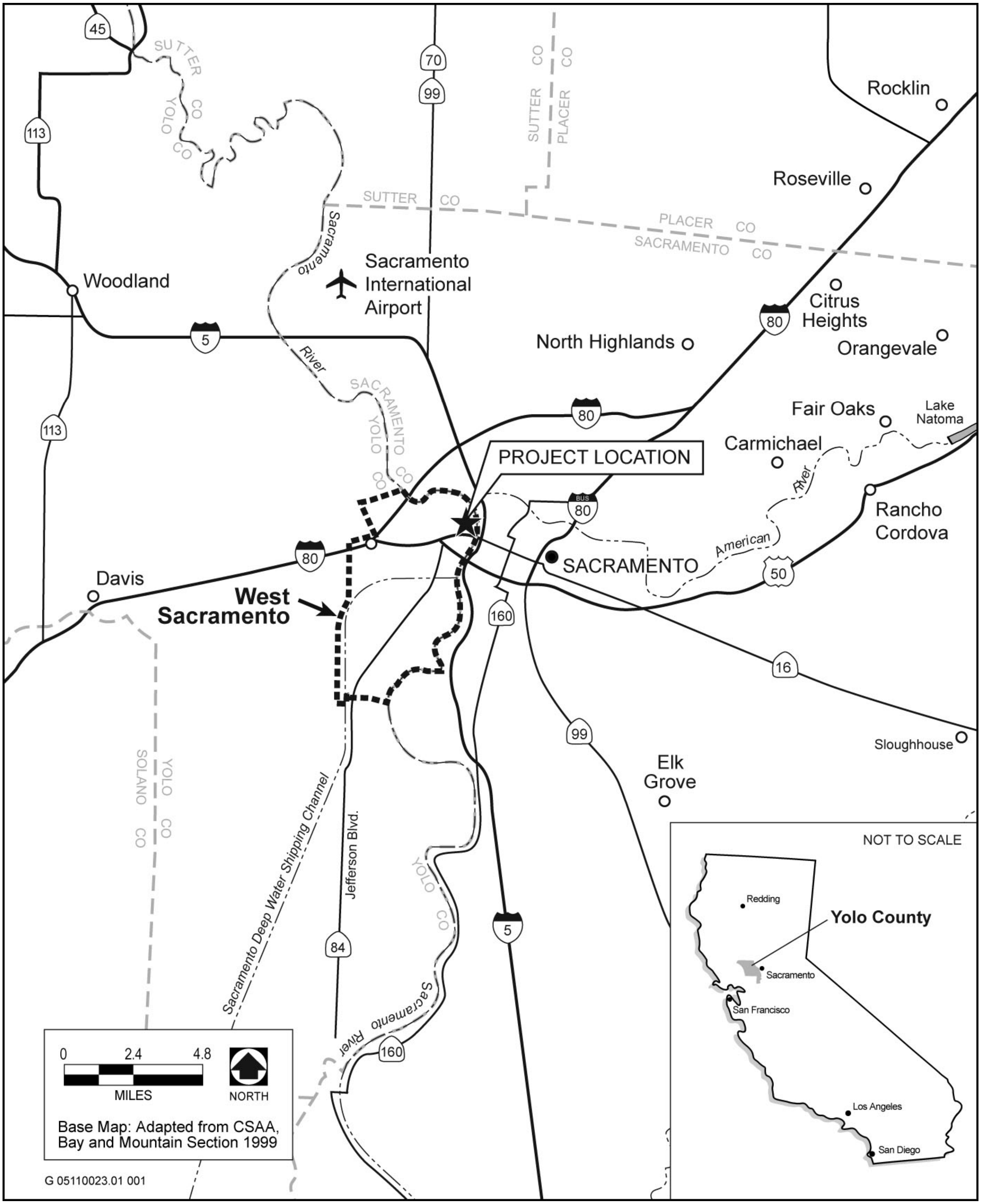
The project site is located in the Washington Specific Plan area, which is bounded by A Street on the north, Sixth and Eighth Streets on the west, the Sacramento River on the east, and State Route (SR) 275 on the south (Exhibit 2-2). (Please note: The portion of SR 275 extending from the Tower Bridge to the junction with Business 80 was relinquished by the State of California to the City of West Sacramento (City) in 2001 to allow conversion of portions of this roadway to a surface street. This stretch of roadway has been renamed the Tower Bridge Gateway. However, construction on the roadway has not been started, no signs along the roadway identify it by its current name, and it is still commonly referred to as SR 275. For these reasons, this EIR identifies the roadway as SR 275.) The Washington Specific Plan area encompasses 194 acres of land within the city planned for residential, commercial, office, public, and open space uses. The project site also is located within the boundaries of Redevelopment Project Area No. 1. The redevelopment area was formed in 1985 and encompasses much of the northern part of the city.

Land uses adjacent to and surrounding the Raley's Landing project site consist of a combination of developed and undeveloped uses. Several residences and mostly undeveloped land are located north of the River 3 area. West of the River 3 area and north of the Washington Street property, the land is more heavily developed, consisting of residential uses. However, some of the parcels still remain undeveloped. An 11-story, 400,000-square-foot office building, commonly referred to as the Ziggurat, and a six-story parking garage are located between the River 1 area and the River 2 and River 3 areas. Headquarters for the Raley's corporation are located west of the Washington Street property. East of the site are the River Walk Park and the Sacramento River. SR 275 and Raley Field are located south of the site.

Access to and through the Raley's Landing project site is provided by numerous roadways in the project vicinity. U.S. Highway 50 (U.S. 50) is the freeway facility closest to the project site, located approximately 0.75 mile south of the site. SR 275 begins east of the site as Capitol Mall in Sacramento, continues over the Tower Bridge (Exhibit 2-2), and provides access to U.S. 50, Interstate 80 (I-80), and Jefferson Boulevard. West Capitol Avenue runs approximately from the Tower Bridge along the southern boundary of the project site to I-80, near the western city limit. Third Street runs north-south, bisecting the project site and connecting with West Capitol Avenue on the south. Access is also provided by Second and Fifth Streets and E, F, and G Streets. The I Street Bridge (Exhibit 2-2) provides a continuation of I Street from the city of Sacramento to the west side of the Sacramento River. The roadway becomes C Street several blocks north of the project site.

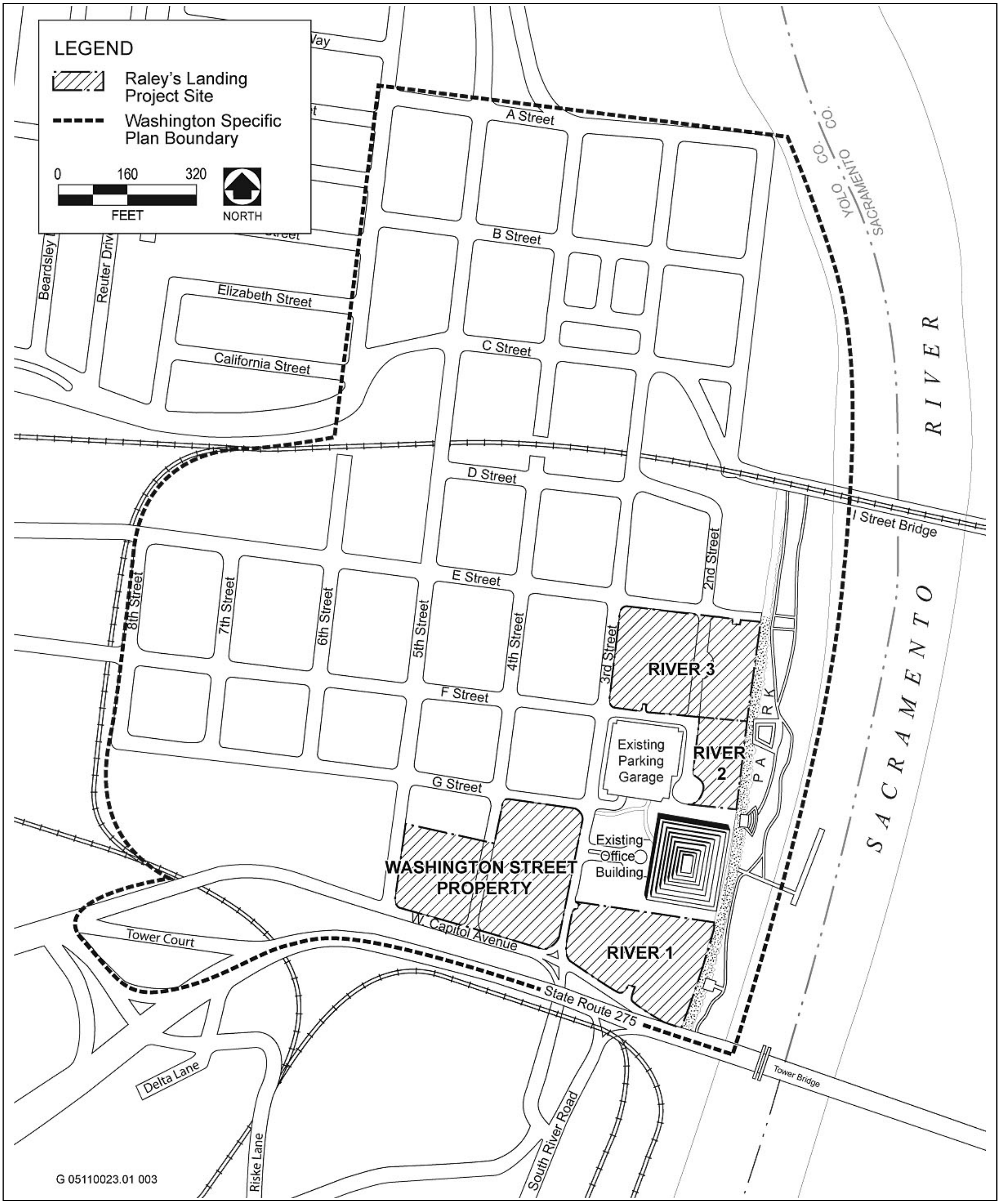
2.2 BACKGROUND AND NEED FOR THE PROPOSED PROJECT

Since its incorporation in 1987, West Sacramento has grown from a small, suburban-rural community to an established city with a population of 40,206 in January 2005 (California Department of Finance 2005). In recent years, new infill development has been taking place in the established northern areas of the city, and Raley Field was built in the Triangle Specific Plan area (the triangular area located south of the proposed project site, generally bordered by SR 275, U.S. 50, and the Sacramento River). What were once predominately agricultural



Source: EDAW 2005

Regional Location Map **Exhibit 2-1**



Source: EDAW 2005

Project Location Map **Exhibit 2-2**

areas south of the city have been approved for residential and commercial development with the Southport Framework Plan. The current and planned development support a vision of the city, described in the *City of West Sacramento General Plan* (General Plan) and other local planning documents, as a powerful job center for the region, with revitalized neighborhoods in the northern areas of the city; new, desirable suburban development in the south; and a vibrant, healthy metropolitan downtown along the river. Population growth in the city is projected to increase to 77,100 people by 2025 (SACOG 2001). The proposed project site is located in the area governed by the *Washington Specific Plan*, which envisions an urban mixed-use development for the project site, including new residential units, a hotel, office space, and commercial/retail space. The project area is also governed by the *Redevelopment Plan for Project No. 1*. High-intensity, mixed-use development has long been anticipated in the project area. Yolo County established the Planned Development Ordinance – 30 (PD-30) zone to accommodate such development along the Sacramento River nearly 20 years ago. A mixed-use project similar to the proposed project in type, size, and location, also known as the Raley's Landing project, was approved by the County almost 20 years ago. The development agreement prepared for the previous project was executed in 1996. In addition, the City Redevelopment Agency prepared an Owner Participation Agreement (OPA) and Public Facilities Agreement for the property in support of the earlier project.

For information on the planning history of the project area, and the project site in particular, see "Local Plans, Policies, Regulations, and Ordinances" in Section 3.1, "Land Use and Planning."

2.3 PROJECT GOAL AND OBJECTIVES

The overarching goal of the proposed Raley's Landing project is the orderly and systematic development of an integrated, mixed-use community that is generally consistent with the goals and policies of the General Plan and *Washington Specific Plan* and is compatible with site characteristics. In support of this overarching goal, the project applicants have developed the following objectives for the proposed project:

- to incorporate a concept of town or village centers by providing basic services within walking distance to development, as well as opportunities for employment and recreation;
- to create a mixed-use development that is a logical extension of adjacent uses, such as the existing Ziggurat office building;
- to incorporate the riverfront and city riverfront park into the project to enhance both the project and City's goal of increasing public use and enhancing the appearance of the riverfront;
- to integrate employment opportunities with residential neighborhoods of varying unit densities throughout the project area;
- to accommodate the housing needs of future residents of West Sacramento;
- to further the goals and objectives of the City's redevelopment plan by providing a modern, technologically efficient office facility suitable for the needs of a major financial institution or other large institutional office user;
- to provide an office facility that would offer convenient access and secure parking for employees, business visitors, and members of the public and that would enhance its tenants' ability to attract and retain high-quality employees;
- to provide office facilities of sufficient size to allow one or more major users located in multiple facilities in the region to consolidate operations in one location, affording operational efficiencies; and
- to provide a prudent investment for its applicant/owner, balancing initial and long-term costs.

The City of West Sacramento has developed the following objectives for the proposed project:

- to satisfy the requirements of the City of West Sacramento's Inclusionary Housing Ordinance;
- to stimulate planned development along the waterfront of West Sacramento, in turn creating a more inviting and safer waterfront environment for its residents;
- to increase office and retail job opportunities in West Sacramento and the residential component that accompanies such jobs;
- to further the development goals of the *Washington Specific Plan*;
- to provide and encourage public access to the Sacramento River waterfront in the Washington Specific Plan area;
- to promote the development of aesthetically pleasing urban structures;
- to enhance the City's supply of high-quality housing that provides a range of housing opportunities available to residents from a wide range of economic levels; and
- to adequately serve the area with a range of urban services and public transit routes.

2.4 INTENDED USES OF EIR

This EIR is intended to be used during consideration of the following entitlements by the City of West Sacramento:

- Raley's Landing Development Agreement modifications;
- PD-30 text modifications;
- Owner Participation Agreement changes to reflect the revised development plan, acknowledge improvements already completed, and reflect change in ownership;
- Public Facilities Agreement changes to reflect the revised development plan, acknowledge improvements already completed, and reflect change in ownership;
- design review;
- agreements regarding inclusionary housing;
- subdivision agreement;
- infrastructure agreements; and
- tree removal permits.

For a list of the permits and approvals from federal, state, and local agencies that may be required for the proposed project, see Section 2.6.

2.5 PROJECT CHARACTERISTICS

2.5.1 LAND USES

The City proposes to annex the Washington Street property to the PD-30 zone so that it can share residential entitlements associated with the PD-30 zone. The proposed project consists of residential, commercial, office, and open space features oriented toward the Sacramento River waterfront on the east and toward West Capitol Avenue, a major thoroughfare and entryway to West Sacramento, on the south. Under the proposed project, residences would be located near a large number of workplaces, as well as near present and future public transit systems. At buildout, the proposed project would contain approximately 900 multifamily residential units, 845,000 gross square feet of office space, 102,000 square feet of commercial/retail uses, and possibly 100–300 hotel rooms with a 7,000- to 15,000-square-foot conference center; it would provide between 4,351 and 4,651 on-site parking spaces, including surface and multilevel parking spaces.

The proposed project is divided into four development areas: the Washington Street property and the River 1, River 2, and River 3 areas. Conceptual representations of the development proposed for these areas are presented in Exhibits 2-3 and 2-4. The fundamental design shown in the exhibits is not expected to change; however, some of the specific details presented for the structures may be changed as further progress is made on the design of the project. The project components would be incorporated into these four areas as follows.

WASHINGTON STREET PROPERTY

The Washington Street property is bordered generally by G Street on the north (the portion west of Fourth Street does not extend as far north as G Street), West Capitol Avenue on the south, Fifth Street on the west, and Third Street on the east. It is a planned mixed-use area combining retail and residential uses. Development on this property would be primarily residential, with 6.9 acres proposed for development of approximately 550 multifamily residential units in two phases. At buildout, the property would have approximately 40,000 square feet (0.8 acre) of retail uses and 900–1,000 off-street parking spaces. A 20-foot setback proposed for the northern boundary of the property would allow for emergency vehicle access.

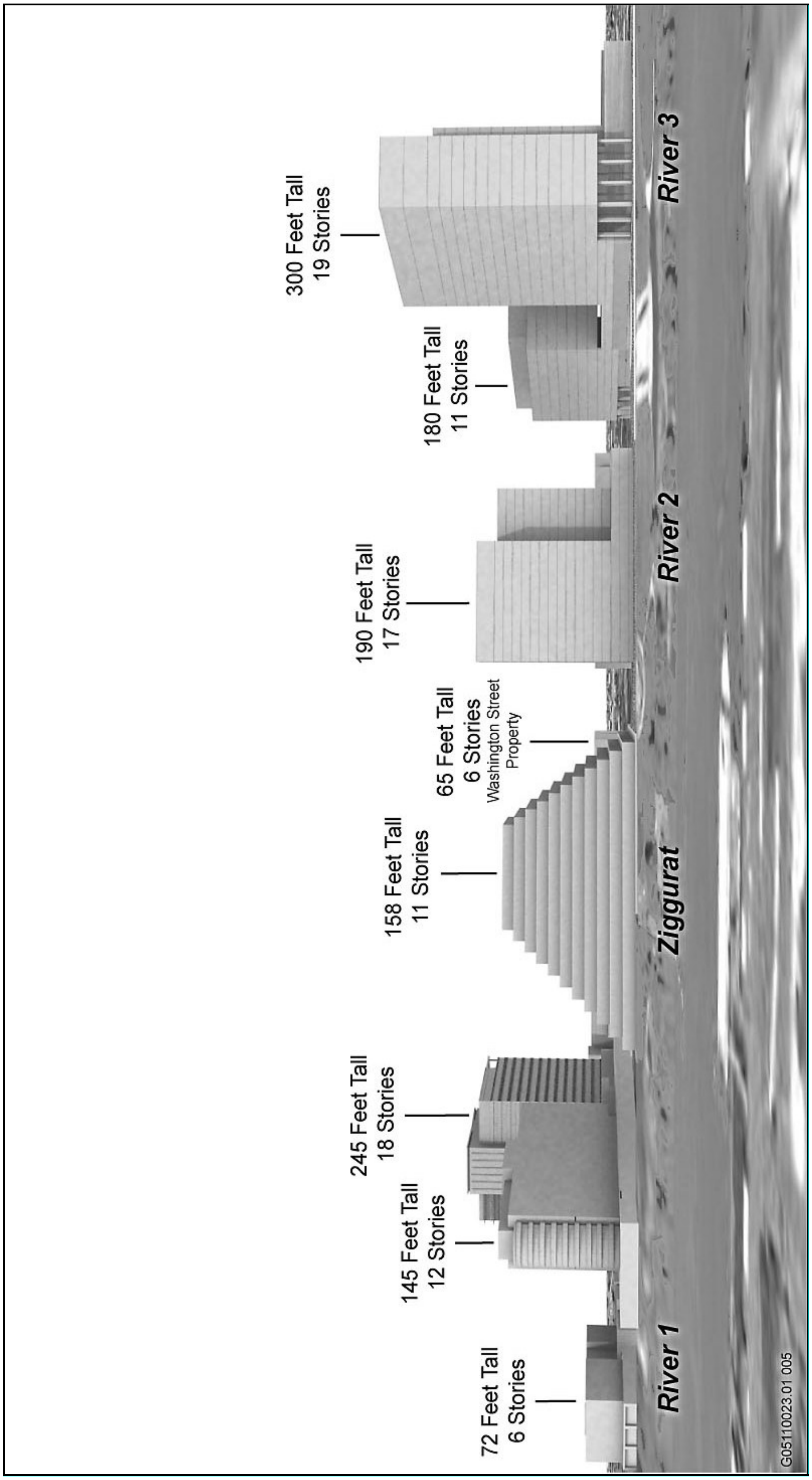
The buildings proposed for the Washington Street property would have four levels of housing over one level of a partially submerged garage, as well as a portion of the retail space. The overall height of the development would be 65 feet. The buildings would have live-work units and townhomes along West Capitol Avenue, and the retail space would be concentrated along Third Street. The interior of the community would include amenities for the residents, including a pool, spa, private gym, recreation center, and barbeque area. The central goal of the development is to create a sense of urban neighborhood that capitalizes on events at Raley Field, River Walk Park, and the retail services and restaurants that would be located within walking distance of the development.

RIVER 1 AREA

The River 1 area is bordered by the Ziggurat on the north, Third Street on the west, the Sacramento River on the east, and the SR 275 exit for West Capitol Avenue on the south. This 4.6-acre parcel would be developed with a mixture of commercial, residential, and retail uses, including approximately 245,000 square feet of office space (1.6 acres), 42,000 square feet of retail/restaurant uses (1.2 acres), and one of the following two scenarios: 200multifamily residential units (1.8 acres) or 150 multifamily residential units (0.3 acre) and a 100- to 300-room hotel with a 7,000- to 15,000-square-foot conference center (1.5 acres). Between 1,000 and 1,200 parking spaces would be provided in the River 1 area.

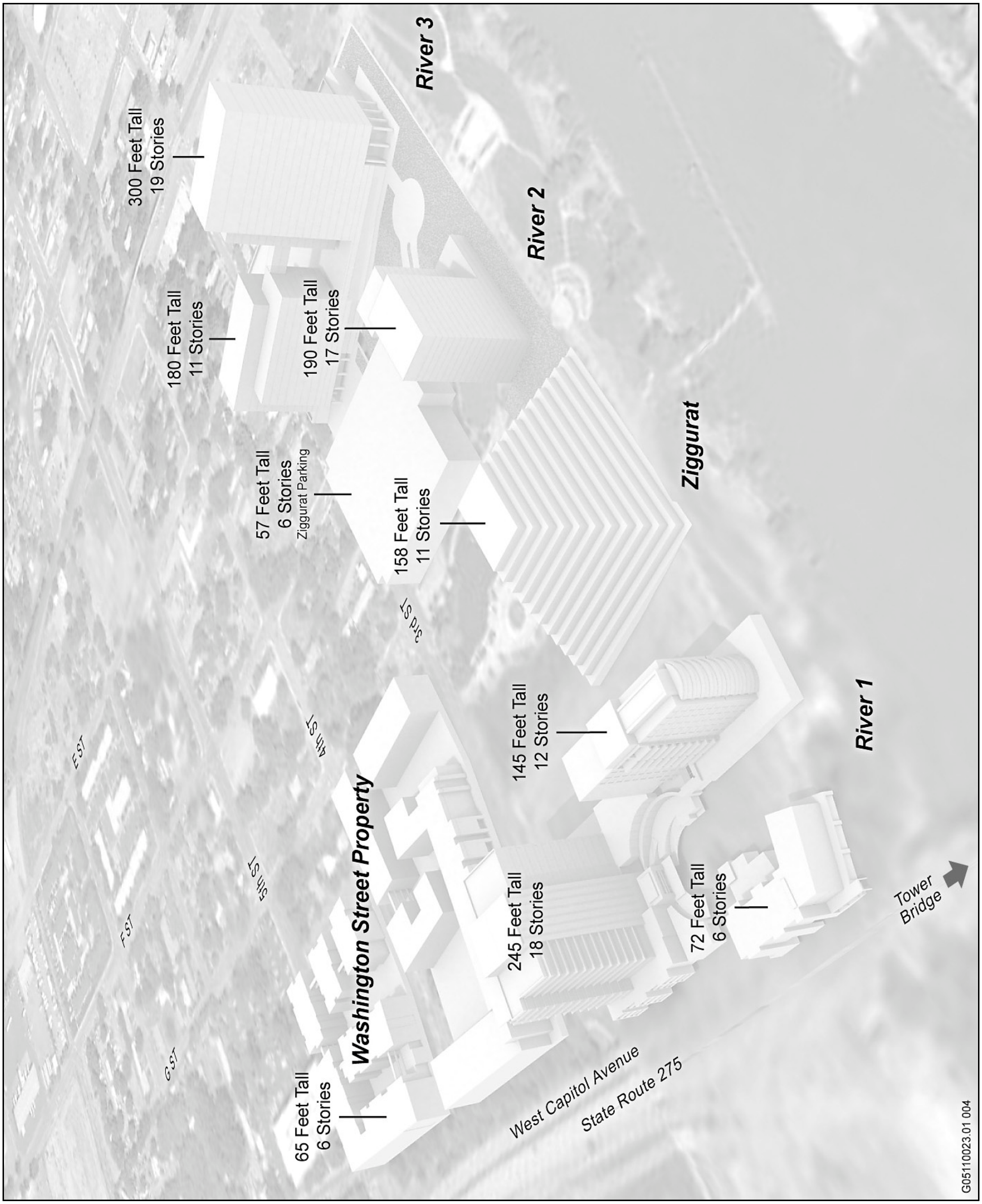
The River 1 area would be developed with three main structures over a two-story parking structure base and would be located around a central plaza. The office tower, which would be the tallest of the three structures, would be located on the west, furthest from the river. It would have approximately 18 levels, including the parking garage, and an overall height of approximately 245 feet. The second tallest structure, the north building, would serve as either an apartment/condominium tower or a hotel and conference center and would be set back from the river to protect the existing views from the Ziggurat. It would have approximately 12 levels, including the parking garage, and an overall height of approximately 145 feet. The shortest structure, the south building, would serve as an apartment/condominium complex and would be located along the southern property border, along West Capitol Avenue, so that the taller buildings would overlook it to the south and east. The south building would have approximately six levels, including the parking garage, and an overall height of approximately 72 feet.

One-story retail shops are planned at grade along Third Street. The interior of the retail spaces would front the two-level parking garage under the planned central plaza. Two to three levels of residential units are planned above the retail space and along the south portion of the garage. The retail at grade level and residential uses



Source: Provided by Panattoni Development Company 2005

Conceptual View of Raley's Landing Project from the East **Exhibit 2-3**



Source: Provided by Panattoni Development Company 2005

Conceptual View of Entire Raley's Landing Project Site **Exhibit 2-4**

above would screen the parking area and create a stepped appearance, providing a change in scale along Third Street to support the pedestrian corridor. Development in the River 1 area would include many public amenities, such as open space, landscaped areas, and access to River Walk Park.

RIVER 2 AREA

The River 2 area is bordered by the River 3 area on the north, Second Street and the existing parking garage on the west, the Sacramento River on the east, and the Ziggurat on the south. Proposed development in the 1.2-acre River 2 area includes approximately 150 multifamily residential units and structured parking for approximately 300 vehicles. The building would have approximately 17 stories and an overall height of approximately 190 feet. This development is in the preliminary conceptual design stage.

RIVER 3 AREA

The River 3 area is bordered by E Street on the north, Third Street on the west, the Sacramento River on the east, and F Street and the River 2 area on the south. Proposed development in the 5.6-acre River 3 area includes approximately 600,000 gross square feet of office space, 20,000 gross square feet of commercial space, and structured parking for 2,151 vehicles. The development would consist of a common podium of lobby and parking uses with two towers rising from the shared podium. The towers would be oriented on the eastern and western portions of the podium. The eastern portion of the development would be constructed before the western portion. Commercial and project amenity spaces would line the east, south, and west facades of the project. Specifically, a cafeteria and terrace garden, designed as project amenities for the owner/tenant, are proposed for the east facade; the south facade would have one story of owner/tenant amenity space and a lobby on the west end; and two stories are planned for the entire west facade, along Third Street. Retail/commercial space is planned for the first story; the story above is planned for parking. The step back for the facade would be located at or below the mandated stepback height of 36 feet. At that point, the west facade would step back 20 feet before rising to its full height.The east tower would have approximately 14 stories of office space above a five-story lobby and parking podium. Approximately 400,000 gross square feet of office space are planned, with a typical office floor of approximately 24,000 gross square feet. The parking structure would accommodate approximately 1,426 cars on four levels of covered parking and one open deck on the roof; additional surface parking might be available. The east tower would have approximately 19 stories, including the podium levels, and an overall height of approximately 300 feet.

The west tower would have approximately seven stories of office space above a four-story lobby and parking podium. (The difference in lobby heights between the eastern and western portions of the development reflects the east to west downward gradient on which the building would be built.) Approximately 200,000 gross square feet of office space are planned, with a typical office floor of approximately 24,000 gross square feet. The parking structure would accommodate approximately 725 cars on four levels of covered parking and one open deck on the roof. In addition, approximately 20,000 gross square feet of commercial spaces would be available along Third Street. The west building would have approximately 11 stories, including the parking structure, and an overall height of approximately 180 feet.

2.5.2 ACCESS, CIRCULATION, AND PARKING

Access to and circulation through the project site would be provided by the existing road network, described previously. The one proposed change to the existing roadways on the project site is that Second Street between E and F Streets would be abandoned in the River 3 area. No roadway improvements are planned as part of the project; however, a vehicle turnaround proposed for the east end of F Street would accommodate visitor dropoffs and fire access requirements for the River 3 area. The main vehicular entrance to the Washington Street property would be located on Fourth Street. Emergency vehicle access on the Washington Street property would be provided, in part, by a 20-foot setback along the northern boundary of the property. Vehicular access to the River 1 area would be provided on Third Street and potentially on West Capitol Avenue. Access to the River 2 area would be provided on Second Street. For the River 3 area, primary vehicular access (two public driveways and one service driveway) would be on E Street; an additional driveway and the primary pedestrian access would be on F Street. Both E and F Streets would provide access for emergency vehicles up to the riverfront.

As described previously, the project would provide between 4,351 and 4,651 on-site parking spaces, including surface parking and spaces in multilevel parking structures. On the Washington Street property, 900–1,000 off-street parking spaces would be used primarily to support residential uses; they also would be used to support the retail uses proposed for the site. Between 1,000 and 1,200 parking spaces would be provided in the River 1 area to support a mix of commercial, residential, and retail uses. Some of these spaces would be provided in a parking structure associated with the office tower; others would be included in the hotel or apartment/condominium buildings or both. Approximately 300 parking spaces would be developed for the 150 residential units proposed for the River 2 area. In the River 3 area, approximately 2,151 parking spaces would be provided for the office development. Most of these spaces would be provided in an on-site parking structure; however, 23 angled surface parking spaces would be located on the northern edge of the River 3 area, on the south side of E Street.

2.5.3 INFRASTRUCTURE

Infrastructure to serve the proposed project site would be extended from facilities already present in the immediate vicinity. A 16-inch-diameter water line parallels Third Street. Additional 4-, 6-, and 8-inch-diameter distribution lines parallel West Capitol Avenue, G Street, and Fourth Street in the vicinity of the River 1 area and the Washington Street property and parallel E Street, F Street, and Second Street in the vicinity of the River 2 and 3 areas. Project development would be served by these water lines, and no new water lines (other than short connections in existing streets) would be needed.

Sewer trunk lines in the project area range from 6- to 21-inch gravity distribution lines. A 12-inch distribution line parallels G Street, and an 8-inch line parallels Fourth Street in the vicinity of the River 1 area and the Washington Street property. Eight-inch distribution lines parallel E Street, F Street, Second Street, and Third Street in the vicinity of the River 2 and 3 areas. Project development would be served by these sewer lines, and no new sewer lines (other than short connections in existing streets) would be needed. Wastewater in West Sacramento is currently conveyed via the Jefferson Pump Station to the City of West Sacramento Wastewater Treatment Plant for treatment and disposal to the Sacramento River. The city was recently annexed to the Sacramento Regional County Sanitation District, and a pipeline is being constructed that will connect West Sacramento to the Sacramento Regional Wastewater Treatment Plant (SRWTP). If service for the city begins in 2007 as planned, wastewater from the project site would be conveyed to the SRWTP for treatment and disposal to the Sacramento River.

Stormwater in the project area drains to an existing pipe system that flows to the Second Street pump station, located in the Second Street parking garage. Drainage flows from the pump through a 48-inch pipe and discharges to the Sacramento River. Project development would be served by this existing pipe system and pump station, and no new drainage lines (other than short connections in existing streets) and no upgraded pump station would be needed.

Natural gas and electricity infrastructure are located in the project area to serve the Ziggurat, the parking garage, and residences. The proposed project would connect to existing infrastructure, and no new gas or electricity lines (other than short connections in existing streets) would be needed.

2.5.4 PROJECT CONSTRUCTION AND PHASING

Construction for the entire project is expected to begin in early 2007 and be completed in early 2011. Estimates of the individual construction schedules for the four areas that make up the project site are presented in Table 2-1.

Table 2-1 Estimated Construction Schedule for the Raley's Landing Project		
Area of Project Site	Begin Construction	Complete Construction
Washington Street property	Phase 1: 2007 Phase 2: 2007	Phase 1: mid-2008 Phase 2: mid-2009
River 1 area	Early 2007	Early 2009
River 2 area	2008	Early 2011
River 3 area	Early 2007	Early 2011
Source: Compiled by EDAW 2005		

2.5.5 MODIFICATIONS TO PD-30 TEXT AND RALEY'S LANDING DEVELOPMENT AGREEMENT

The proposed project analyzed in this EIR involves modifications to the PD-30 text to reflect changes in the zoning ordinance as well as modifications to the Raley's Landing Development Agreement to reflect minor deviations from the *Washington Specific Plan* needed to accommodate the Raley's Landing project. The PD-30 text (Yolo County Ordinance 681.119), adopted by the Yolo County Board of Supervisors on May 6, 1986, and amended by the City on November 16, 1995, describes the rezoning to PD-30 of the riverfront area bordered by D Street on the north, Third Street on the west, the Sacramento River on the east, and West Capitol Avenue on the south. The PD-30 text does not address the Washington Street property.

The existing Raley's Landing Development Agreement, dated January 12, 1996, documents the agreement between the City of West Sacramento, Raley's, and trustees of the Teel Family Trust. It describes the mixed-use development envisioned for the River 1, River 2, and River 3 areas of the proposed project site in 1996. Like the PD-30 text, the development agreement does not address the Washington Street property.

PROPOSED PD-30 TEXT MODIFICATIONS

The modifications proposed for the PD-30 text involve expanding the affected area to include the Washington Street property. Additional amendments involve increasing the number of housing units identified for the project site, reducing the amount of commercial development, increasing the number of parking spaces, modifying the dimensions of acceptable parking stall sizes, revising the Riverfront Mixed Use density to allow for higher density development, abandoning Second Street on the project site, placing midrise buildings directly adjacent to the street and increasing their height, and modifying the parking design criteria. See Appendix B for more details about these proposed modifications.

PROPOSED RALEY'S LANDING DEVELOPMENT AGREEMENT MODIFICATIONS

The modifications proposed for the Raley's Landing Development Agreement also involve expanding the development agreement area to include the Washington Street property, making minor changes to the description of mixed uses proposed for the site, and revising the Riverfront Mixed Use density standard to allow for higher density development. See Appendix B for more details about these proposed modifications.

2.6 REQUIRED PERMITS AND APPROVALS

The proposed project would require the approval of the City Council. Other permits and approvals that may be required for the proposed project are identified in Table 2-2. For a list of the intended uses of this EIR, see Section 2.4.

Table 2-2 Required Permits and Approvals	
Agency	Permit or Approval
Federal	
U.S. Fish and Wildlife Service	Endangered species consultation for effects on valley elderberry longhorn beetle (VELB). A previous habitat conservation plan for VELB may be applied.
State	
California Air Resources Board	Emissions permit
Central Valley Regional Water Quality Control Board	General construction activity stormwater permit under the National Pollutant Discharge Elimination System
	Stormwater Pollution Prevention Plan – approval of plan to control stormwater runoff during construction
	General order for construction site dewatering activities
California Department of Fish and Game	Endangered species consultation – if state-listed endangered species or their habitat is substantially affected by the proposed project
Office of Historic Preservation	Decision on eligibility for listing of potentially historic resources in the California Register of Historical Resources
Reclamation Board	Encroachment permit (including review by the U.S. Army Corps of Engineers)
Local	
City of West Sacramento	Approval of building permit, grading permit, drainage plans, and other site improvements as required in the *Washington Specific Plan* and PD-30 text
West Sacramento Fire Department	Review of site design and construction plans for fire safety
Yolo/Solano Air Quality Management District	Authority to Construct Permit to Operate
Source: Compiled by EDAW 2005	

2.7 PROJECT APPLICANTS

The applicants for the Raley's Landing project are Raley's, Inc.; the Teel Family Trust; D/P Fourth Street, LLP (Panattoni Development); Principal Real Estate Investors; and Signature Properties.

3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

3.0 APPROACH TO THE ENVIRONMENTAL ANALYSIS

The California Environmental Quality Act Guidelines (State CEQA Guidelines) require the environmental analysis for an EIR to include an evaluation of impacts associated with the proposed project and to identify mitigation for any potentially significant impacts. State CEQA Guidelines Section 15126.2(a) states:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

According to the State CEQA Guidelines, an EIR should describe feasible measures that could minimize significant adverse impacts (Section 15126.4[a][1]) and measures that are fully enforceable through permit conditions, agreements, or other legally binding processes (Section 15126.4[a][2]). Mitigation measures are not required for effects that are found to be less than significant.

As discussed in Chapter 1, "Introduction," the City of West Sacramento (City) determined through preliminary analysis of the proposed project, analysis of previous environmental documents, and review of public and agency comments received on the notice of preparation/initial study (NOP/IS) that the proposed project would have no impact on agricultural resources. Therefore, this issue is not addressed further in this DEIR.

3.0.1 SECTION FORMAT

The environmental setting, impacts, and required mitigation measures for the proposed project are organized by issue area, corresponding to topics in the CEQA Environmental Checklist (State CEQA Guidelines Appendix G, as amended). Each section follows the same format:

- The **"Regulatory Framework"** subsection identifies the plans, policies, laws, regulations, and ordinances that are relevant to each issue area. This subsection describes required permits and other approvals necessary to implement the proposed project and includes a table that identifies the project's consistency with relevant local policies.

- The **"Existing Conditions"** subsection provides an overview of the existing physical environmental conditions (i.e., the environmental baseline) for each issue area at the time this analysis was prepared. The environmental baseline at the time of the release of the NOP is the context against which potential project impacts are evaluated.

- The **"Impacts and Mitigation Measures"** subsection presents the following information:

- The **“Analysis Methodology”** subsection describes the methods, process, procedures, and assumptions used to formulate and conduct the impact analysis. To provide the most complete analysis of project impacts, the individual technical sections in this DEIR (Sections 3.1 through 3.13) address the scenario for the River 1 area that would have the greatest impact on the environment for that resource area. The traffic analysis, for example, addresses the scenario under which the hotel and conference center would be built and the number of residential units would be reduced by 50 because more vehicle trips would result under the hotel scenario than if only the residential units were developed.

- The **“Thresholds of Significance”** subsection identifies the criteria established by the lead agency to define at what level an impact would be considered significant. Criteria may be defined by a lead agency based on examples found in CEQA or the State CEQA Guidelines, scientific and factual data relative to the lead agency jurisdiction, views of the public in the affected area, the policy/regulatory environment of affected jurisdictions, and other factors.

- The **“Impact Analysis”** subsection presents an assessment of the potential impacts of the proposed project and specifies why impacts are found to be significant and unavoidable, significant, potentially significant, or less than significant or why there is no environmental impact. Environmental impact conclusions are summarized at the beginning of each impact discussion. Mitigation measures to avoid identified significant and potentially significant impacts or reduce them to a less-than-significant level, where feasible, follow the impact discussions. The measures are numbered to correspond with the numbering of the impacts they mitigate. Where no feasible mitigation is available to reduce impacts to a less-than-significant level, the impacts are identified as significant and unavoidable. The analysis of cumulative impacts is presented in Chapter 5, and the analysis of growth-inducing impacts is provided in Chapter 6.

3.0.2 TERMINOLOGY USED IN THIS EIR

IMPACT LEVELS

This EIR uses the following terminology to denote the significance of environmental impacts of the proposed project:

- ***No impact*** would occur if the construction, operation, and maintenance of the proposed project would not have any direct or indirect effects on the environment.

- An impact that is not a substantial and adverse change in the environment is ***less than significant***. This impact level does not require mitigation.

- A ***significant*** impact is defined by Public Resources Code Section 21068 as “a substantial, or potentially substantial, adverse change in the environment.” Mitigation measures or alternatives to the proposed project must be identified in an attempt to reduce the magnitude of significant impacts to less-than-significant levels.

- A ***potentially significant*** impact is one that, if it were to occur, would be considered a significant impact as described above; however, the occurrence of the impact cannot be immediately determined with certainty. For CEQA purposes, a potentially significant impact is treated (i.e., mitigated) as if it were a significant impact.

- A ***significant and unavoidable*** impact is a substantial adverse effect on the environment that cannot be mitigated to a less-than-significant level. A project with significant and unavoidable impacts could proceed, but the lead agency would be required to prepare a statement of overriding considerations, in accordance with State CEQA Guidelines Section 15093, explaining why the lead agency would proceed with the project in spite of the potential for significant impacts.

3.1 LAND USE AND PLANNING

This section presents a description of the land use plans and policies that apply to the Raley's Landing project and a description of the existing land uses in the project area. The analysis focuses on the relationship and potential conflict between the proposed project and existing plans and policies.

3.1.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to land use and planning are applicable to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

No state plans, policies, regulations, or laws related to land use and planning are applicable to the proposed project.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

The area incorporated as the City of West Sacramento in 1987 has undergone substantial growth during the past several decades. Development in the area, and in the project area in particular, has been governed by a variety of local planning documents, some of which have been superseded by other planning documents or are otherwise no longer in use. Until the City's incorporation, land use planning in the area was the responsibility of Yolo County. Formal land use planning in the county dates back to 1939. The *Yolo County General Plan* was adopted by the Yolo County Board of Supervisors in 1983. Before the City of West Sacramento adopted its own general plan, the most important components of the county general plan in terms of the City were the Land Use Element of the 1976 *East Yolo General Plan* and the 1982 *Southport Area Plan*. Until the *West Sacramento General Plan* (General Plan) was adopted in 1990, these two documents constituted the interim general plan for the City (City of West Sacramento 2000).

In August 1985, 2 years before the city was incorporated, the Yolo County Board of Supervisors established the West Sacramento Redevelopment Project Area. This project area included the Broderick Reuse Area, which generally corresponds to the Washington Specific Plan area. The redevelopment plan for the Broderick Reuse Area was approved by the board of supervisors in May 1986. Subarea A-1 of the Broderick Reuse Area (the current location of the Ziggurat; the parking garage; and the River 1, 2, and 3 areas) was the first site proposed for redevelopment in the West Sacramento Redevelopment Project Area. Also in May 1986, the board of supervisors adopted An Ordinance of the County of Yolo Rezoning Certain Real Property to Planned Development (referred to in this EIR as the Planned Development Ordinance – 30, or PD-30, text). That document addressed Subarea A (including Subarea A-1) of the Broderick Reuse Area. In October 1987, redevelopment of Subarea A-1 was the focus of the *Revised Master Plan for Subarea A-1*. In 1990, several years after the city was incorporated, it adopted the *City of West Sacramento General Plan*. The *Washington Specific Plan*, which addresses the area formerly identified as the Broderick Reuse Area, as well as a few acres south of West Capitol Avenue on the west side of the plan area, was adopted in 1996. In the same year, the City entered into a development agreement with Raley's and the Teel Family Trust regarding a Raley's Landing project. The area governed by the Raley's Landing Development Agreement coincides with the area identified in earlier planning documents as Subarea A-1 and includes the property identified in this EIR as the River 1, 2, and 3 areas. The *Washington Specific Plan* remains the most focused planning document that applies to the Washington Street property. The following discussion addresses the planning documents that are currently related to the Raley's Landing project.

City of West Sacramento General Plan

A city's or county's general plan functions as a "constitution" regarding all future physical development in an area. All other city or county implementing plans and ordinances that relate to the area governed by the general plan must be consistent with it. The general plan is a comprehensive, long-term, and general document that describes proposals for the physical development of the city or county and of any land outside its boundaries that in the city's or county's judgment bears relation to its planning (California Government Code Section 65300 et seq.). It is comprehensive in that it addresses a broad range of aspects of the community's existing and future physical development, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area. The general plan is a long-range document in that it typically addresses the physical character of an area over a 20-year period. Finally, although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

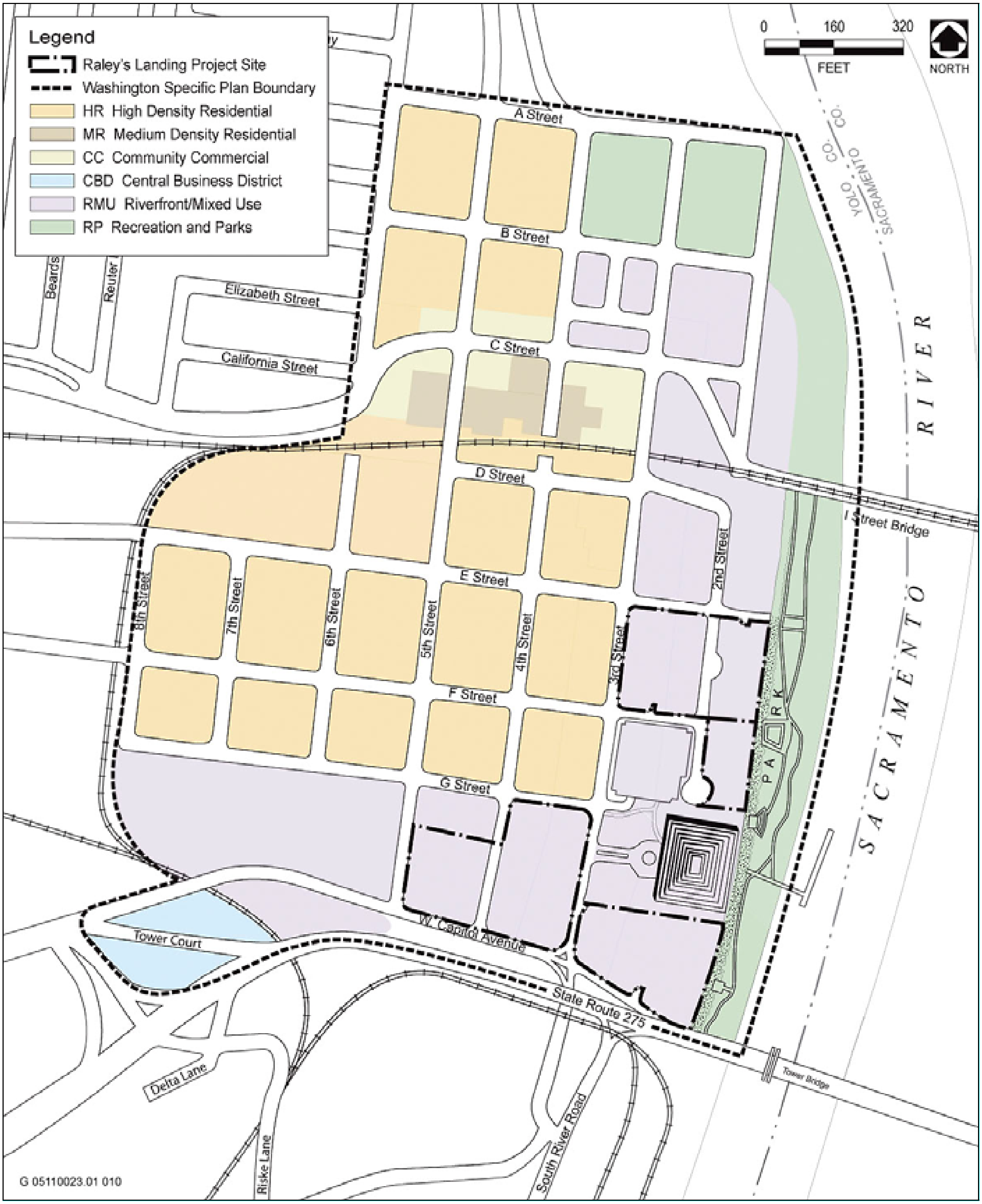
The *City of West Sacramento General Plan* (City of West Sacramento 2004a) was adopted on May 3, 1990, and has been amended 11 times, including two minor amendments in 2005. The updated General Plan was adopted on December 8, 2004. The vision of West Sacramento described in the General Plan includes a riverfront that is a well-known regional attraction that offers a gathering point with active social points of activities and quiet, natural opportunities to enjoy the river; a strong, vibrant, and healthy metropolitan downtown along the river that provides a world-class urban experience for workers, visitors, and a large residential population; and a powerful job center for the region that maintains its current strengths in distribution while adding significant new employment in manufacturing and office occupations. In addition, the northern half of the city, where the proposed Raley's Landing project would be located, is envisioned as a location where positive cultural and physical aspects of all areas would be emphasized, where improvements to streets and utilities will be matched by steady private upgrading of homes by residents, and where neighborhoods will retain a sense of local identity and pride, as well as serve a meaningful part of the city. West Capitol Avenue is specifically envisioned as an active and attractive mixed-use commercial and residential core.

The General Plan land use designation for the proposed project site is RMU (Riverfront Mixed Use) (Exhibit 3.1-1). The RMU General Plan designation provides for marinas; restaurants; retail; amusement; hotel and motel uses; midrise and high-rise offices; multifamily residential units oriented principally toward the river; public and quasi-public uses; and similar, compatible uses. All development under this designation shall be approved pursuant to a master development plan (e.g., specific plan).

Washington Specific Plan

The *Washington Specific Plan*, adopted by the City on May 15, 1996, was prepared to guide the redevelopment and conservation of the Washington Plan Area (Exhibit 3.1-2) in the city of West Sacramento (City of West Sacramento 1996). The City had identified the area—with its mix of architecturally rich streets and decrepit houses, healthy businesses and unemployed persons, and both beautiful and trash-cluttered riverfront areas—as being in immediate need of public and private improvements. The specific plan reflects the City's effort to link the future with the past by rekindling the economic vitality and spirit of community that characterized the West Sacramento waterfront when it occupied the center of the newly emerging Sacramento region.

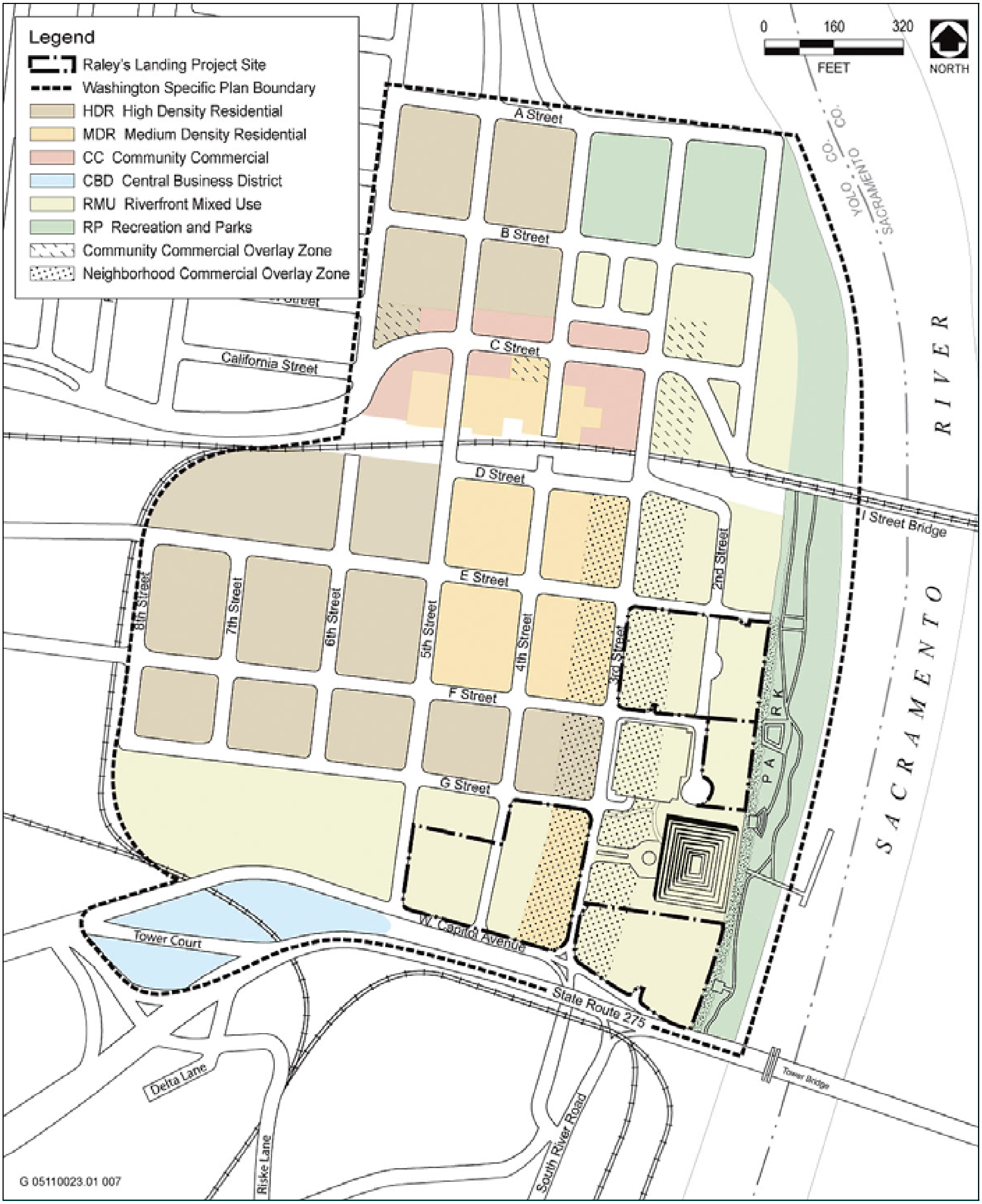
The specific plan envisions the Washington area as the focal point for capitalizing on the Sacramento River as a regional asset. Among the links envisioned by the plan are development linking the Washington area to existing and proposed development north and south of the area to form a continuous improved riverfront development and enhancement zone; trails and commercial corridors through the area that link the West Sacramento Central Business District with the riverfront; and automobile, pedestrian, and bicycle routes that link the area with regional routes. The plan also envisions landscaped access that reunites West Sacramento's residents with the



Source: City of West Sacramento 2002

Land Use Designations at the Project Site under the 2004 West Sacramento General Plan

Exhibit 3.1-1



Sources: City of West Sacramento 1995, 1996

Land Use Designations at the Project Site under the 1996 Washington Specific Plan **Exhibit 3.1-2**

riverfront, development in the area that spurs West Sacramento's economic growth and helps to establish the City as a major force in regional economic growth, and public investments in improving the area that set the framework for increased private investment in the area as well as the rest of West Sacramento. As described in the *Washington Specific Plan*, the plan area would be developed with approximately 1,300 new residential units, a 428-room hotel, 2,509,100 square feet of new office space, and 187,000 square feet of new commercial/retail space (City of West Sacramento 1996).

The *Washington Specific Plan* land use designation for the proposed project site is RMU (Riverfront Mixed Use) with a partial NC (Neighborhood Commercial) overlay (Exhibit 3.1-2). Permitted uses under the RMU specific plan designation are midrise and high-rise offices, multifamily residential units, hotels and motels, retail, restaurants, amusement, and marinas. The intent of this designation is to create a mixed-use zone with an array of intensive uses that is oriented toward the river or toward West Capitol Avenue. The NC overlay allows development of neighborhood and locally serving retail and personal or professional services in addition to the underlying permitted uses. Single-family or multifamily residential or neighborhood commercial uses are permitted on the upper floors. The purpose of this overlay district is to create centrally located neighborhood shopping areas where convenient, pedestrian-oriented shopping, services, sidewalk areas, and neighborhood gathering places (such as mini-plazas) provide the setting for a friendly way of life for residents and workers in the specific plan area.

Redevelopment Plan for Project No. 1

The *Redevelopment Plan for Project No. 1,* which addresses the project site, was adopted by the Yolo County Board of Supervisors in 1986 and adopted by the City after incorporation. Although implementation plans are prepared each 5 years, the plan itself has not been amended since it was adopted. The purpose of the plan is to guide the City Redevelopment Agency in the redevelopment, rehabilitation, and revitalization of the project area. Goals set out in the plan include designing and developing areas that are stagnant; strengthening the economic base; providing adequate land for parking and open spaces; and ensuring site design standards and other design elements.

Sacramento Area Council of Governments Sacramento Region Blueprint

The Sacramento Region Blueprint is a transportation and land use study that was initiated by the Sacramento Area Council of Governments (SACOG) Board of Directors in 2002 to guide land use and transportation choices over the next 50 years. The Sacramento region, which includes El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties and their 22 constituent cities, is expected to add another 1.7 million people, 1 million new jobs, and 840,000 new homes by 2050. Realizing that growth would have profound impacts on the region, SACOG and civic partner Valley Vision initiated the project to study future land use patterns and their potential effects on the region's transportation system, air quality, housing, open space, and other resources.

Many public workshops and meetings with local government staff and elected officials led the SACOG Board of Directors to adopt in December 2004 the Preferred Blueprint Scenario, which represents a vision for growth that promotes compact, mixed-use development and more transit choices as an alternative to low-density development. The Sacramento Region Blueprint depicts a way for the region to grow through the year 2050 that is generally consistent with the following seven principles of smart growth:

- Provide a variety of transportation choices. Community design can encourage people to walk, ride bicycles, ride the bus, ride light rail, take the train, or carpool.

- Offer housing choices and opportunities. Providing a variety of places where people can live creates opportunities for the variety of people who need them: families, singles, seniors, and people with special needs.

- Take advantage of compact development. Creating environments that are more compactly built and use space in an efficient but more aesthetic manner can encourage more walking, biking, and public transit use.

- Use existing assets. Focusing development in communities with vacant land or intensifying development of underutilized land can make better use of existing public infrastructure, including roads.

- Encourage mixed land uses. Building homes and shops, entertainment, office, and light industrial uses near each other can encourage active, vital neighborhoods.

- Preserve open space, farmland, and natural beauty through natural resources conservation. Encourage the incorporation of public use open space (e.g., parks, town squares, trails, and greenbelts) within development projects in acreages above that stipulated by the state.

- Encourage distinctive, attractive communities with quality design. The design details of any land use development are factors that can influence the attractiveness of living in a compact development and facilitate the ease of walking and biking to work or to neighborhood service establishments (SACOG and Valley Vision 2004).

The blueprint is increasingly used by counties, cities, and developers as a guide for development in the region, but it is not a regulatory plan, so it has no legally binding effect on future actions.

Sacramento Riverfront Master Plan

The *Sacramento Riverfront Master Plan* (Wallace Roberts & Todd 2003), prepared in November 2003, was prepared to update the *West Sacramento Riverfront Master Plan* and the *Sacramento Riverfront Master Plan*, both completed in 1994, and to present a new vision for the future of the Sacramento riverfront. Reflecting an unprecedented level of collaboration between the communities of Sacramento and West Sacramento, the updated *Sacramento Riverfront Master Plan* is the first plan to treat both sides of the river comprehensively. The vision for the waterfront shared by both communities is rooted in the conviction that creating a high-quality riverfront public space and surrounding it with vibrant urban neighborhoods would make a more sustainable form of urban life in which the places people work and live are close, thus reversing trends of suburbanization and resource waste. This kind of compact and diverse urban district, where cultural and recreational opportunities can be more readily accessed, provides a richer social experience for those who live, work, and recreate within it. To achieve this vision, the master plan builds on four central guiding principles: creating riverfront neighborhoods and districts, establishing a web of connectivity, strengthening the green backbone of the community (i.e., expanding public open space), and making places for celebration.

The following goals and principles embodied in the previous plans are carried forward into the current master plan update:

- Establish the riverfront as an active, vibrant urban district.
- Emphasize the river as the focus of the riverfront area.
- Provide alternate circulation modes with emphasis on nonvehicular modes.
- Provide pedestrian and bicycle linkages along the river and into adjacent areas.
- Emphasize nonvehicular orientation, amenities, and scale.
- Provide a balance of visitor-serving and community-serving uses and amenities.
- Provide for uses and amenities that respond to Sacramento’s history and unique character.
- Provide uses and amenities that complement those in the area.
- Provide for mixed-use/integrated land uses.
- Provide for land uses that are flexible and can respond to market conditions and finance opportunities.
- Minimize traffic and parking impacts.
- Balance resource conservation with development.
- Provide for a safe environment day and night, 7 days a week.

The master plan is a study plan, not a regulatory plan. It provides an overall vision for the riverfront and is intended as a blueprint for possible future actions. It does not, however, have a legally binding effect on future actions, although the cities could move to implement specific administrative actions that would amend specific plans or regulations. Such actions would require public and environmental review under existing laws. Alternatively, the two cities could, together or separately, formally adopt the master plan, which would require comprehensive environmental review of the program described in the plan and action to ensure consistency with existing general or specific plans.

PD-30 Text

The Yolo County Board of Supervisors adopted the PD-30 text on May 6, 1986. The document text was amended on November 16, 1995, to address issues related to auto circulation and parking and loading area requirements. The ordinance governs the area bounded by D Street on the north, West Capitol Avenue on the south, Third Street on the west, and the riverfront on the east. The purpose of creating the PD-30 zone was to encourage innovation; to stimulate new development of a mixed, high-quality nature; and to create an environment that encourages a high level of property maintenance. The rezoning encouraged the development of high-intensity hotel, residential, office, and commercial uses with public plazas in the area to take maximum advantage of the immediately adjacent riverfront. The PD-30 text identifies standards and regulations to guide development, providing specific guidance on the uses and designs allowed in the area.

Raley's Landing Development Agreement

The Development Ordinance by and between the City of West Sacramento, Raley's and James E. Teel and Joyce Raley Teel, Trustees of the Teel Family Trust, Dated January 20, 1995, referred to in this EIR as the Raley's Landing Development Agreement, is dated January 12, 1996, for reference purposes, and was executed on February 1, 1996. The agreement applies to the area bounded by E Street on the north, West Capitol Avenue on the south, Third Street on the west, and the riverfront on the east. The agreement describes a mixed-use development that includes a 428-room hotel, approximately 945,000 square feet of office space, retail shops totaling approximately 46,000 square feet, 3,357 off-street parking spaces, and a 218-unit apartment building.

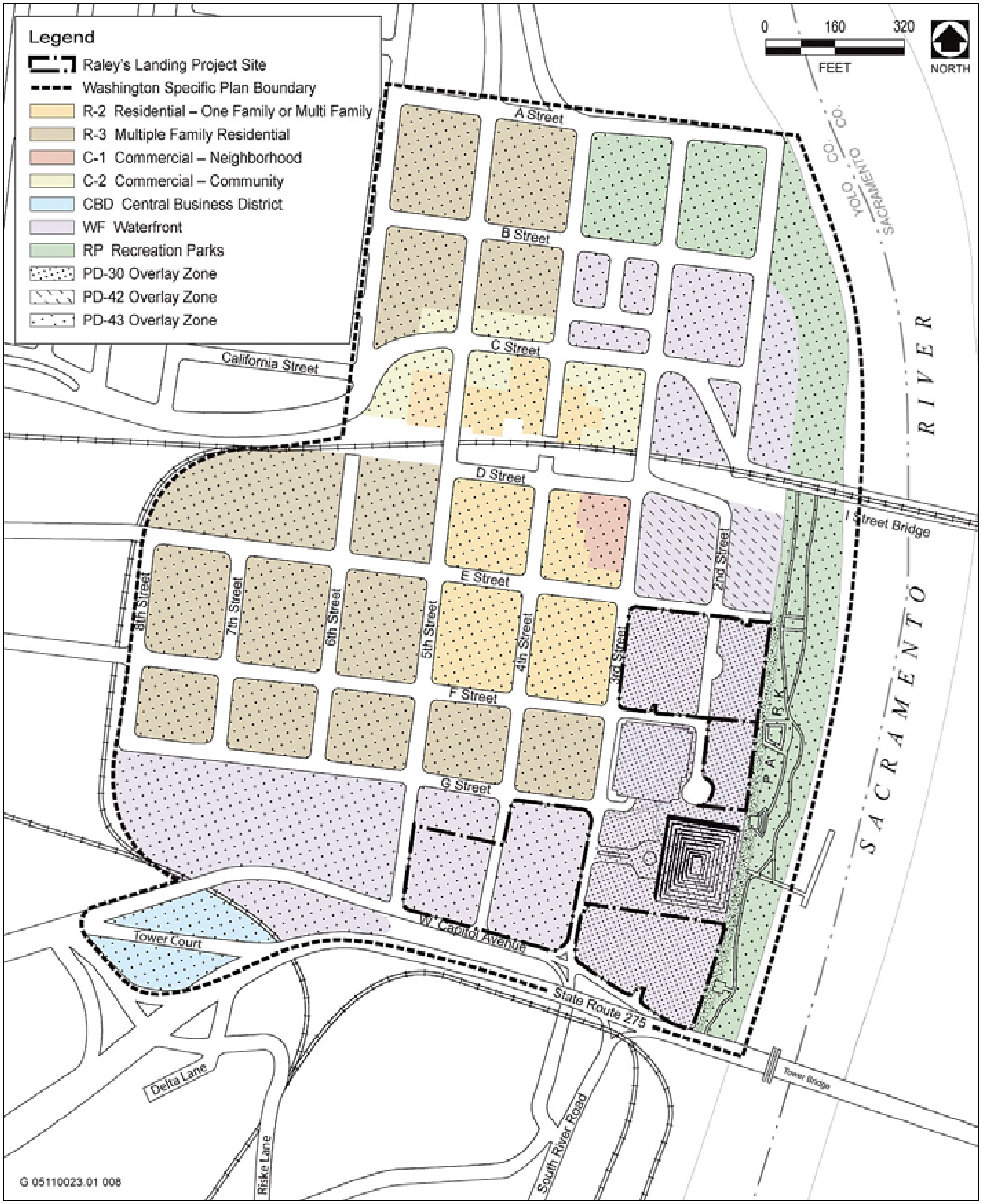
ZONING UNDER THE CITY OF WEST SACRAMENTO ZONING ORDINANCE

The proposed project site is zoned on the City's 2004 zoning map as WF (Waterfront), with a PD-30 overlay on the River 1, 2, and 3 areas and a PD-43 (Washington Specific Plan) overlay on the Washington Street property (Exhibit 3.1-3). The WF zone is designed for high-density mixed uses that capitalize on the city's river frontage.

3.1.2 EXISTING CONDITIONS

The proposed Raley's Landing project site encompasses approximately 18.2 acres in the northeastern portion of the city of West Sacramento, Yolo County, California (Exhibit 2-1). The site comprises four areas, identified as the Washington Street property and the River 1, River 2, and River 3 areas (Exhibit 2-2). The Washington Street property is in use as a parking area for events at Raley Field. The remainder of the project site consists of vacant land with no structures.

A variety of land uses are partially enclosed by and surround the project site. A six-story parking garage is bounded by the River 1 area on the north and the River 2 area on the east. The Ziggurat, an 11-story, 400,000-square-foot office building, is located immediately south of the River 2 area and north of the River 1 area. A few residences are located north of the project site on E Street; however, most of the property immediately north of the site is undeveloped. Union Pacific Railroad tracks run east-west just north of D Street, one block north of the site. The project site is bordered on the east by the Sacramento River. Riverfront uses include River Walk Park and a dock. The Tower Bridge crosses the river immediately southeast of the site. West Capitol Avenue provides the southern boundary of the site. Further south is SR 275, access to Business 80, and Raley Field. Various



Source: City of West Sacramento 2004b

Zoning at the Project Site under the 2004 West Sacramento Zoning Map **Exhibit 3.1-3**

linking railroad tracks encircling Raley Field and located adjacent to it are used by the Union Pacific Railroad. Located west of the project site are single-family residences, apartments, headquarters for the Raley's corporation, and a motel.

3.1.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Evaluation of potential land use impacts of the proposed project was based on a review of the planning documents pertaining to the project study area, including the *City of West Sacramento General Plan* and associated EIR, the City Zoning Ordinance, the *Washington Specific Plan* and associated EIR, the *Riverfront Master Plan*, the Raley's Landing Development Agreement, and the PD-30 text; consultation with the City; and field review of the proposed project site and surroundings.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on the State CEQA Guidelines. A land use and planning impact is considered significant if implementation of the proposed project would do any of the following:

- physically divide an established community;

- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or

- conflict with any applicable habitat conservation plan (HCP) or natural community conservation plan (NCCP).

IMPACT ANALYSIS

CEQA identifies significance thresholds relating to the physical division of a community. The project proposes construction and operation of an integrated, mixed-use community. It would provide office, commercial, and residential development that would be designed to encourage auto and pedestrian traffic from within and outside of the project site. The project would be located in the city's existing block and roadway system and would be integrated with the existing community. Implementing the project would not result in the physical division of the existing community. Because the proposed project would have no impact on the environment relating to this threshold, it is not discussed further in this section.

IMPACT 3.1-1 Land Use and Planning — Consistency with Plans and Zoning Map. *The proposed project is consistent with the land use designations and zoning identified for the project site in the General Plan, in the* Washington Specific Plan*, and on the City Zoning Map. The project proposal contains minor inconsistencies with the PD-30 text and Raley's Landing Development Agreement. Under the proposed project, these documents would be updated to resolve all inconsistencies between them and the project. These updates are not themselves considered environmental impacts. Therefore, this impact is considered* ***less than significant****.*

The site is designated as RMU in the General Plan and as RMU with a partial NC overlay in the *Washington Specific Plan*, and it is zoned by the City as WF, with a PD-30 overlay on the River 1, 2, and 3 areas and a PD-43 overlay (for the *Washington Specific Plan*) on the Washington Street property. Allowable uses under these designations include midrise and high-rise offices; multifamily residential units principally oriented to the river; hotels and motels; retail; and similar, compatible uses. Therefore, the proposed project is consistent with the land use designations and zoning identified for the project site in the General Plan, in the *Washington Specific Plan*, and on the City Zoning Map. As shown in Table 3.1-1, the proposed project is consistent with all the relevant land use policies of the General Plan and *Washington Specific Plan*. The goals, objectives, allowable land uses, and other core elements of General Plan and *Washington Specific Plan* do not need to be modified; therefore, amendments to these plans are not necessary. Minor textual updates would be made to properly reflect the development included in the proposed project.

Although both the PD-30 text and Raley's Landing Development Agreement anticipate development of a mixed-use development like the proposed project, the project is not entirely consistent with those documents. To resolve these inconsistencies, these documents would be updated with adoption of the project. The PD-30 text would be updated to include the Washington Street property, increase the number of housing units identified for the project site, reduce the amount of commercial development, increase the number of parking spaces, modify the dimensions of acceptable parking stall sizes, allow for higher density development, abandon Second Street on the project site, place midrise buildings directly adjacent to the street and increase their height, and modify the parking design criteria. The Raley's Landing Development Agreement would be updated to include the Washington Street property, describe mixed uses proposed for the site, and allow for higher density development. These changes are described in more detail in Appendix B. If the proposed project is approved by the City, the PD-30 text and the Raley's Landing Development Agreement will be updated to accommodate the project, so all inconsistencies between the existing documents and the Raley's Landing project would be resolved before the project is implemented. These updates are not themselves considered environmental impacts. This impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.1-2 **Land Use and Planning — Consistency with HCP or NCCP.** *An HCP for Yolo County in development since 1991 is in the process of being rewritten as an NCCP. The NCCP has not been completed or approved; therefore, an evaluation of the project's consistency with this plan is not possible or required. A project-specific HCP for incidental take of valley elderberry longhorn beetle (VELB) was completed in 1997 for a previous Raley's Landing project proposal. Although incidental take authorization associated with this HCP has expired, the proposed project is consistent with this HCP. Therefore, this impact is considered* ***less than significant****.*

An HCP has been in development in Yolo County since 1991. In 2001, the participating jurisdictions agreed with a request from the California Department of Fish and Game to extend the planning process so that the HCP could be rewritten as an NCCP. The NCCP development and approval process is still underway (City of Davis 2005). Because the NCCP is still in preparation and has not been approved, an evaluation of the Raley's Landing project's consistency with this plan is not possible or required. However, because the proposed project site is located in the city of West Sacramento, in an area that has been planned for development for several decades, that has been used for industrial and other development in the past (e.g., shipbuilding, fish cannery), and that contains long-standing residential and office development in the immediate vicinity, the NCCP currently being prepared is not expected to propose habitat conservation or other activities in the project area that would preclude planned development.

An HCP for VELB, a species federally listed as threatened, was approved in 1997 for a previous Raley's Landing project proposal. The project in 1997 encompassed the property bounded by E Street on the north, West Capitol Avenue on the south, Third Street on the west, and the Sacramento River on the east. The River 1, 2, and 3 areas of the currently proposed project fall within this area. The HCP was prepared to support incidental take authorization for removal of two elderberry shrubs in the project area. Consistent with the HCP and associated incidental take authorization, these shrubs were removed in 1997, and required mitigation (i.e., purchase of mitigation credits and planting of replacement shrubs at an approved mitigation bank) was completed. Incidental take authorization supported by this HCP was valid for 5 years and expired in 2002. However, because both the incidental take activity considered in the 1997 HCP and appropriate mitigation have been completed, the proposed project would not conflict with this HCP were it still active. Because the project would not conflict with an applicable HCP or NCCP, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

Table 3.1-1
Consistency with Policies Relating to Land Use

Policy	Consistency	Consistency Analysis
City of West Sacramento General Plan Land Use Element		
A1. The City shall seek to preserve West Sacramento's traditional neighborhood qualities, while recognizing existing City commitments to new projects and accommodating region-serving development in certain areas of the city and in certain segments of the economy.	Yes	Under the proposed project, a densely developed area of mixed uses would be constructed adjacent to the neighborhood on currently undeveloped parcels. The project would be consistent with the General Plan's policy of bringing region-serving development to the city.
C1. The City shall promote and assist with the maintenance and expansion of West Sacramento's commercial sector to meet the needs of West Sacramento residents, employees, and visitors.	Yes	The proposed project includes 102,000 square feet of commercial/retail uses intended to serve residents and employees in the project site, as well as residents outside the project site and visitors to the region. The project also may include a hotel with up to 300 rooms.
C2. The City shall seek to selectively expand its share of the region-serving retail commercial development.	Yes	The proposed project includes 102,000 square feet of commercial/retail uses intended to serve residents and employees in the project site, as well as residents outside the project site and visitors to the region.
C3. The City shall promote the establishment, maintenance, and expansion of businesses in West Sacramento that generate high retail sales taxes as important contributors to the local economy.	Yes	The proposed project includes 102,000 square feet of commercial/retail uses intended to serve residents and employees in the project site, as well as residents outside the project site and visitors to the region.
C4. The City shall promote the Central Business District and areas along the Sacramento River between the I Street Bridge and the Barge Canal as pedestrian oriented commercial centers of West Sacramento.	Yes	One of the objectives of the proposed project is to incorporate a concept of town or village centers by providing basic services within walking distance to development. The project is also intended to capitalize on events at Raley Field, the River Walk Park, and other locations within walking distance of the project site.
C5. The City shall promote development of West Sacramento as a visitor destination, capitalizing on its riverfront location.	Yes	The objectives of the proposed project include incorporating the riverfront and city riverfront park into the project to enhance both the project and City's goal of increasing public use and enhancing the appearance of the riverfront, developing the waterfront of West Sacramento, creating a more inviting and safer waterfront environment for its residents, and providing and encouraging public access to the Sacramento River waterfront in the Washington Specific Plan area.

Table 3.1-1 (continued)
Consistency with Policies Relating to Land Use

Policy	Consistency	Consistency Analysis
C6. The City shall promote the development of hotels, motels, and related convention facilities, with an emphasis on high-quality development.	Yes	One of the development options for the River 1 area includes a 100- to 300-room hotel with a 7,000- to 15,000-square foot convention center.
C8. In approving new commercial projects, the City shall seek to ensure that such projects reflect the City's concern for achieving and maintaining high quality development.	Yes	The retail element of the project would serve residents and employees who will generate the demand for high-quality retail services.
C9. New commercial development shall be designed to avoid the appearance of strip development.	Yes	For most areas on the project site, the commercial uses would be incorporated into the same facilities as the office and residential uses or within a short walking distance from them. The buildings housing this mix of uses would range in height from several stories to nearly 20 stories tall.
D1. Local-serving office uses shall be located in the Central Business District and throughout the community in areas easily accessible to West Sacramento residents.	Yes	Because of the proximity of major roadways, the project site would be easily accessible from most areas in West Sacramento.
D2. Mid-rise and high-rise office uses serving regional needs shall be limited to the Central Business District and areas along the Sacramento River.	Yes	The midrise and high-rise office uses of the project would be located along the Sacramento River.
D3. The City shall encourage efforts to attract major office tenants to West Sacramento.	Yes	Facilities included in the project are of sufficient scale to attract major office tenants.
D4. In approving new office projects, the City shall seek to ensure that such projects reflect the City's concern for achieving and maintaining high quality development.	Yes	One of the objectives of the proposed project is to further the goals and objectives of the City's redevelopment plan by providing a modern, technologically efficient office facility suitable for the needs of a major financial institution or other large institutional office user.
Washington Specific Plan		
1.A.1. The City shall promote development in the Washington Plan Area that contributes to the vitality of the community by establishing economic and physical linkages within the Washington Plan Area and between the Washington Plan Area and adjacent communities.	Yes	The objectives of the proposed project include incorporating a concept of town or village centers by providing basic services within walking distance to development, as well as opportunities for employment and recreation, and integrating employment opportunities with residential neighborhoods of varying unit densities throughout the project area.
1.A.3. The City shall seek to protect the existing neighborhood quality of the Washington Plan Area.	Yes	Implementing the proposed project would introduce a densely developed area of mixed uses adjacent to the neighborhood on currently undeveloped parcels as envisioned in the *Washington Specific Plan*. Although the east side of Third Street would be developed with high-density mixed-use development consistent with its Riverfront Mixed Use land use designation, the edges along the street would be down scaled and treated through

Table 3.1-1 (continued)
Consistency with Policies Relating to Land Use

Policy	Consistency	Consistency Analysis
		architecture, landscape, and land use in a manner that encourages pedestrian street life.
1.B.1. The City shall maintain residential land in appropriate designations and zoning categories to ensure that existing residents of the Washington Plan Area have the opportunity to remain in the area.	Yes	The project includes approximately 850–900 residential units on the project site and proposes no changes to existing land use designations and zoning for the site or adjacent existing residential sites.
1.B.2. The City shall designate land for residential development in the Washington Plan Area that expands housing opportunities, particularly for employees in future non-residential projects in the area.	Yes	The project includes approximately 850–900 residential units on the project site. In addition, one of the project's objectives is to provide a residential component that accompanies the office and retail job opportunities in West Sacramento.
1.C.1. The City shall ensure that adequate land is designated for commercial development that will serve the needs of Washington Plan Area residents and employees.	Yes	The proposed project includes approximately 102,000 gross square feet of commercial development intended to serve residents on the project site and in the region.
1.C.2. The City shall promote development of the Washington Plan Area as a visitor destination, capitalizing on its riverfront location.	Yes	The objectives of the proposed project include incorporating the riverfront and city riverfront park into the project to enhance both the project and City's goal of increasing public use and enhancing the appearance of the riverfront; "jump starting" planned development along the waterfront of West Sacramento, in turn creating a more inviting and safer waterfront environment for its residents; and providing and encouraging public access to the Sacramento River waterfront in the Washington Specific Plan area.
1.C.3. The City shall promote the Washington Plan Area as a prime location for development of offices serving the region.	Yes	The proposed project includes approximately 845,000 gross square feet of office development.
Redevelopment Plan for Project No. 1		
A. The replanning, redesign, redevelopment and development of developed or undeveloped areas which are stagnant or improperly utilized.	Yes	The overarching goal of the proposed Raley's Landing project is the orderly and systematic development of an integrated, mixed-use community. The objectives of the project include furthering the goals and objectives of the City's redevelopment plan by providing a modern, technologically efficient office facility suitable for the needs of a major financial institution or other large institutional office user and furthering the development goals of the Washington Specific Plan.
B. The strengthening of the economic base of the Project Area and the community by the installation of needed site improvements to stimulate new residential, commercial, and industrial expansion, employment and economic growth.	Yes	The objectives of the project include incorporating a concept of town or village centers by providing basic services within walking distance to development, as well as opportunities for employment and recreation; integrating employment opportunities with residential neighborhoods of varying unit densities

Table 3.1-1 (continued) Consistency with Policies Relating to Land Use		
Policy	Consistency	Consistency Analysis
		throughout the project area; furthering the goals and objectives of the City's redevelopment plan by providing a modern, technologically efficient office facility suitable for the needs of a major financial institution or other large institutional office user; providing office facilities of sufficient size to allow one or more major users located in multiple facilities in the region to consolidate operations in one location, affording operational efficiencies; and increasing office and retail job opportunities in West Sacramento and the residential component that accompanies such jobs. [Again, many of the objectives support this goal.]
D. The provision of adequate land for off street parking and open spaces.	Yes	The project would include between 4,351 and 4,651 on-site parking spaces, most of it in multilevel structures. The objectives of the project include incorporating the riverfront and city riverfront park into the project to enhance both the project and City's goal of increasing public use and enhancing the appearance of the riverfront.
E. The establishment and implementation of performance criteria to assure site design standards and environmental quality and other design elements which provide unity and integrity to the entire Project.	Yes	The objectives of the project include promoting the development of aesthetically pleasing urban structures. The City of West Sacramento has not adopted citywide standards regarding the specific visual appearance of development. Instead, proposed project designs are subject to review and approval by the City, which includes review by the Design Review Board, Planning Commission, and/or City Council to ensure that projects do not conflict with the vision for the City.
Source: Compiled by EDAW 2005		

3.2 POPULATION, EMPLOYMENT, AND HOUSING

This section documents the existing population, employment, and housing conditions in the city of West Sacramento and Yolo County, presents estimates of changes to those conditions that could be created with implementation of the proposed project, and evaluates whether those changes could trigger adverse physical effects in the city or the region.

3.2.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to population, employment, and housing are applicable to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

No state plans, policies, regulations, or laws related to population, employment, and housing are applicable to the proposed project.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of West Sacramento General Plan

The following policies from the Land Use Element of the General Plan pertain to population, employment, and housing and are relevant to the proposed project:

- **Policy A.4:** The City shall monitor residential and non-residential development and make adjustments as necessary in land use designations and the rate of project approvals to promote a reasonable citywide balance between new employment generating development and housing development.

- **Policy B.2:** The City shall promote the development of affordable housing to meet the needs of low- and moderate-income households.

- **Policy C.1:** The City shall promote and assist with the maintenance and expansion of West Sacramento's commercial sector to meet the needs of West Sacramento residents, employees, and visitors.

- **Policy C.2:** The City shall seek to selectively expand its share of the region-serving retail commercial development.

- **Policy C.3:** The City shall promote the establishment, maintenance, and expansion of businesses in West Sacramento that generate high retail sales taxes as important contributors to the local economy.

- **Policy C.6:** The City shall promote the development of hotels, motels, and related convention facilities, with an emphasis on high-quality development.

The following goals and policies from the Housing Element of the General Plan pertain to population, employment, and housing and are relevant to the proposed project:

- **Policy A.1:** The City shall continue to promote the development of a broad mix of housing types by adopting affordable housing goals and providing incentives to achieve those goals citywide.

- **Policy A.15:** The City shall promote homeownership in new housing constructed for low- and moderate-income households through infill development.

- **Goal D:** Balance of Employment and Housing: To seek a balance of employment and housing in proximity to one another and opportunities for residents to find affordable housing near, and accessible to, their places of employment.

  - **Policy D.1:** Higher density housing shall be located in proximity to, and be accessible to, commercial services, public transit routes, employment centers, and non-automotive routes (pedestrian, bicycle, etc.).

  - **Policy D.3:** The City shall promote mixed-use and/or higher density residential/commercial development along West Capitol Avenue, on infill properties in the West Sacramento Redevelopment Project Area, in the Waterfront Zone, around a proposed regional rail station, and in other appropriate commercial zones.

- **Goal F:** Equal Housing Opportunity: To promote equal opportunity to secure safe, sanitary, and affordable housing for all members of the community regardless of race, sex, or other arbitrary factors.

  - **Policy F.1:** The City shall seek to meet the special housing needs of individuals with disabilities, very low- and low-income large families, senior citizens, farmworkers and their families, female-headed households with children, and others with special needs.

Washington Specific Plan

The following goals and policy from the *Washington Specific Plan* pertain to population, employment, and housing and are relevant to the proposed project:

- **Goal 1.B:** To support residential development that meets the housing needs of all current and future residents of the Washington Plan Area.

- **Goal 1.C:** To encourage a variety of commercial uses to support existing and new residents, employees, and visitors in the Washington Plan Area.

- **Policy 2.C.1:** The City shall endeavor to ensure that a range of suitable housing types in sufficient supply is available near major employment center in the Washington Plan Area.

Redevelopment Plan for Project No. 1

In May 1986, the Yolo County Board of Supervisors approved the Redevelopment Plan for Project No. 1. The plan addresses redevelopment of east Yolo County. Upon its incorporation in January 1987, the City of West Sacramento assumed responsibility for the implementation of the redevelopment plan. The major goals of the redevelopment plan are the:

- replanning, redesign, redevelopment, and development of developed or undeveloped areas that are stagnant or improperly utilized;

- strengthening of the economic base of the project area and the community by the installation of needed site improvements to stimulate new residential, commercial, and industrial expansion, employment, and economic growth;

- provision of adequate land for off-street parking and open spaces; and

- establishment and implementation of performance criteria to ensure site design standards and environmental quality and other design elements that provide unity and integrity to the entire project.

Sacramento Area Council of Governments Sacramento Region Blueprint

The Sacramento Region Blueprint is a transportation and land use study initiated by the Sacramento Area Council of Governments (SACOG) Board of Directors to guide land use and transportation choices in El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties and their 22 constituent cities over the next 50 years. It is not a plan or policy document, so it has no legally binding effect on future actions. However, it does serve as a framework to guide local government in growth and transportation planning.

The study anticipates that another 1.7 million people, 1 million new jobs, and 840,000 new homes will be added to the region by 2050. Under the blueprint's Preferred Blueprint Scenario, a vision for growth that promotes compact, mixed-use development and more transit choices as an alternative to low-density development, the population of West Sacramento would grow to more than 130,000; the number of jobs would increase to 56,364, with most growth in the retail and office sectors (only modest growth in the industrial section, the currently dominant job sector in the city); and nearly half of the total housing in the city would be provided by multifamily residential units (SACOG and Valley Vision 2005).

3.2.2 EXISTING CONDITIONS

POPULATION

From 1990 to 2000, the population of the city of West Sacramento increased from 28,898 to 31,615, or 8.6% over the 10-year period (U.S. Census Bureau 2002). The current population as of January 1, 2005, is estimated to be 40,206 (California Department of Finance 2005). Population growth in the city is projected to continue; however, estimates of the future population as forecast by different planning processes used by SACOG and the City vary depending on the assumptions used in the projections. Projected population estimates from these sources are presented in Table 3.2-1.

The SACOG estimates were based on extrapolations of historic growth trends, U.S. Census Bureau data, and housing unit projections. Population estimates in the General Plan and the *Washington Specific Plan* were based on planned future projects, occupancy levels within the various planned land use, and other factors. Population projections in the General Plan are greater than those generated by SACOG because of an economic slowdown that resulted in a substantial decrease in the number of residential building permits being completed and a delay in construction of an additional bridge to the Southport area, which prevented new residential developments from proceeding as originally anticipated when the General Plan was prepared. Some of the variation among population projections in the General Plan and from SACOG is also attributable to the age of the projections. The General Plan projections were last updated in 1993. The SACOG projections were published in 2001. As projections age, unforeseen circumstances typically decrease the accuracy of the projections over time.

Table 3.2-1
Population Estimates for the City of West Sacramento

	Projection Year				
	2005	2010	2015	2020	2025
Sacramento Area Council of Governments	40,030	48,410	57,730	66,940	77,100
City of West Sacramento General Plan	55,000	71,900	78,300	--	--
Washington Specific Plan (Washington Specific Plan area only)	--	--	4,750	--	--

Sources: SACOG 2001a, City of West Sacramento 1996, City of West Sacramento 2004

HOUSING

Data from the 2000 U.S. Census Bureau for West Sacramento reflect a community with growing housing values, low vacancy, and relatively small households. The number of housing units in the city has increased from 11,652 in 1990 to 12,133 in 2000 (U.S. Census Bureau 2002). The city's housing growth rate over this 10-year period was nearly 4%.

According to the California Department of Housing and Community Development (HCD), a housing vacancy rate of 5% is considered normal (HCD 2000). Vacancy rates below 5% indicate a housing shortage in a community. The U.S. Census Bureau reports that the city had a vacancy rate of 1.3% for owner-occupied units and 6.6% for rental units in 2000. Similarly, the county had a vacancy rate of 0.9% for owner-occupied units and 3.4% for rental units in 2000. These vacancy rates indicate that both the city and county have a tight housing market and a housing shortage.

JOBS-HOUSING BALANCE

The concept of jobs-housing balance presumes that the environment and quality of life in a given area benefit when the area has a balance between its housing supply and employment base. An area that has too many jobs relative to its housing supply is likely (in the absence of offsetting factors) to have relatively rapid escalations in housing prices and intensified pressure for additional residential development. Conversely, if an area has relatively few jobs in comparison to the number of employed residents, many of the workers are required to commute to jobs outside their area of residence.

The simplest measure of jobs-housing balance is an index based on the ratio of employed residents (which is influenced by the number of homes) to jobs in the area, with an index of 1.0 indicating a jobs-housing balance. An index below 1.0 indicates that the area has more jobs than employed residents and may suggest that many employees are commuting in from outside the community. An index above 1.0 indicates that the area has more employed residents than jobs and may suggest that many residents are commuting to jobs outside the community.

It should be noted that jobs-housing indices are more useful for examining the potential for "self-containment" at the regional level than in determining whether this self-sufficiency actually exists in a given community. Even if communities have a statistical balance between jobs and housing, they are still likely to experience in-commuting and out-commuting, given the variety and dispersed nature of employment and residential opportunities elsewhere in the region and the high level of mobility offered by automobiles. The anticipated trend in the jobs-housing index for Yolo County, based primarily on data from the U.S. Census Bureau and SACOG, is shown in Table 3.2-2.

Table 3.2-2
Jobs-Housing Balance for Yolo County

	Year				
	1990[1]	2000[1]	2010	2015	2025
Employment (number of jobs)[2]	57,894	93,367	127,233	140,628	172,064
Housing units[2]	53,000	61,587	77,745	85,120	100,004
Households[2]	50,972	59,375	75,555	82,642	97,062
Employed residents	66,260	76,648	121,644[3]	133,053[3]	156,270[3]
Jobs-housing index[4]	1.14	0.82	0.96	0.95	0.91

1 Source: U.S. Census Bureau 2002
2 Source: SACOG 2001a
3 Assumes estimated number of employees per household would remain at an average of 1.61 through 2025 (SACOG 2001a).
4 Jobs-housing index = employed residents/number of jobs.
Source: Compiled by EDAW 2005

As shown in Table 3.2-2, the jobs-housing index for the county has decreased from 1.14 in 1990 to 0.82 in 2000. This decrease indicates that a relatively small imbalance between housing (i.e., reflected as employed residents) and jobs in the county shifted between 1990 and 2000, with employment growth outpacing housing growth. These indices indicate that Yolo County had more jobs than employed residents in 2000 and that the county supported a net in-commuting population. The jobs-housing index for the county is projected to steadily increase to 0.96 in 2010 then slightly decrease to 0.91 in 2025. These changes in the jobs-housing index indicate that as project development continues in the region, the jobs-housing index would remain relatively balanced, but the number of jobs would still exceed the number of employed residents living in the county.

The anticipated trend in the jobs-housing index for the City of West Sacramento (City), based primarily on data from the U.S. Census Bureau and SACOG, is shown in Table 3.2-3.

Table 3.2-3
Jobs-Housing Balance for the City of West Sacramento

	Year				
	1990[1]	2000[1]	2010	2015	2025
Employment (number of jobs)[2]	16,159	34,205	50,004	66,722	75,298
Housing units[2]	11,652	12,133	19,189	26,573	30,591
Households[2]	11,052	11,404	18,526	25,660	29,530
Employed residents	15,694	31,361	45,018[3]	62,354[3]	71,758[3]
Jobs-housing index[4]	0.97	0.92	0.90	0.93	0.95

[1] Source: U.S. Census Bureau 2002
[2] Source: SACOG 2001a
[3] Assumes estimated number of employees per household would remain at an average of 2.43 through 2025 (SACOG 2001a).
[4] Jobs-housing index = employed residents/number of jobs.
Source: Compiled by EDAW 2005

As shown in Table 3.2-3, the jobs-housing index for the city has decreased from 0.97 in 1990 to an estimated 0.92 in 2000 but has still remained relatively balanced, and the ratio of jobs to employed residents was nearly equal. The jobs-housing index for the city is projected to remain relatively constant, equaling 0.95 in 2025. This indicates a near balance between housing and employment in the future.

EMPLOYMENT

Employment growth is one of the primary determinants of housing demand. Working-age individuals often will choose a place to live based on employment prospects in the local area. Therefore, employment trends are an important indicator of housing demand. The rate of employment growth, and the types of jobs most likely to be created, would determine how much housing would be needed by type and cost. For example, an economy based on seasonal tourism will generate different housing needs for local workers than economies based on government, education, research, or technology.

According to the U.S. Census Bureau, in 1990, employment in West Sacramento totaled approximately 16,159 jobs. In 2000, employment in the city totaled 34,205 jobs (U.S. Census Bureau 2002), with the most prominent occupations in wholesale trade, retail trade, and manufacturing (U.S. Census Bureau 1997). In Yolo County as a whole, there were 57,894 jobs in 1990, whereas in 2000, the number of jobs in the county totaled 93,367 (U.S. Census Bureau 2002).

Similar to the population projections discussed above, estimates of future employment in the city vary depending on the age of the projections and the assumptions used. Projected employment estimates from two sources are presented in Table 3.2-4. SACOG estimates are based on extrapolation of historic growth trends and active surveys of the region by SACOG's staff. Projections in the General Plan are based on job generation expected from assumptions relating to population and residential dwellings. The city is expected to reach employment buildout in 2035 (SACOG 2001b).

Table 3.2-4
Employment Estimates for the City of West Sacramento

	Projection Year			
	2005	2010	2020	2025
Sacramento Area Council of Governments	41,282	50,004	66,722	75,298
City of West Sacramento General Plan	34,146	42,141	--	--

Sources: SACOG 2001a, City of West Sacramento 2004

3.2.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

This examination of population, employment, and housing conditions is based on information obtained from review of the plans for the proposed project; review of available population, employment, and housing data and projections from the City, SACOG, the U.S. Census Bureau, and other sources; and review of applicable elements and policies from the General Plan and the *Washington Specific Plan*.

Specific indirect impacts associated with increased population, housing, and employment, such as traffic congestion, air quality degradation, and noise generation, are addressed in each technical section of this DEIR as appropriate. These technical sections provide a detailed analysis of other relevant environmental effects as a result of development of the proposed project; therefore, indirect impacts are not discussed further in this section.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on the State CEQA Guidelines. A population, employment, and housing impact is considered significant if implementation of the proposed project would do any of the following:

- induce substantial population growth in an area, either directly (for example, through construction of new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);

- generate a substantial demand for new housing, the construction of which could cause significant environmental impacts;

- displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere; or

- result in employment or housing conditions inconsistent with goals, policies, or objectives in the General Plan.

IMPACT ANALYSIS

The project is proposed for parcels that are currently vacant. Because implementing the project would not displace existing housing or residents and thus would not necessitate construction of replacement housing elsewhere, this issue will not be analyzed further in this DEIR.

IMPACT 3.2-1 Population, Employment, and Housing — Population Growth and Housing Demand during Construction. *The proposed project would generate a temporary increase in employment in the city of 50–70 construction jobs during the peak construction period. The number of existing construction personnel in the region is considered sufficient to meet demand associated with the proposed project; therefore, this temporary increase in employment is not expected to generate any substantial new population growth in the area or generate the need for substantial additional housing for construction workers. This impact is considered* ***less than significant****.*

Project construction activities would occur at intervals throughout the planning horizon of the proposed project. A greater number of construction workers would be employed during peak construction periods (determined by market demand and overall economic conditions), whereas fewer construction workers would be employed during nonpeak periods. It is estimated, based on prior analyses of similar projects, that the proposed project would generate approximately 50–70 construction jobs during the peak construction periods. According to the latest labor data available from the U.S. Census Bureau (2002), 1,091 residents in the city and 4,259 residents in the county are employed in the construction industry (U.S. Census Bureau 2002). This existing number of residents in the city and county who are employed in the construction industry are expected to be sufficient to meet the demand for construction workers that would be generated by the proposed project. Because construction workers serving the proposed project can be expected to come from the city itself and from nearby communities in Yolo and Sacramento Counties, substantial population growth or increases in housing demand in the region as a result of these jobs is not anticipated. Furthermore, even if some construction workers from outside the region were employed at the project site, construction workers typically do not change residences when assigned to a new construction site, and substantial permanent relocation of these workers to the area is not anticipated. Therefore, the proposed project would not generate the need for substantial additional housing in the city during construction. Because of these conditions, the impact related to population growth and housing demand associated with project construction is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.2-2 Population, Employment, and Housing — Increased Population Growth. *The proposed project would develop new residential units, which would result in direct increases in population. The estimated project-related increases in population would exceed planned growth anticipated in the General Plan and Washington Specific Plan. However, inconsistencies solely between planned and anticipated population growth as described here would not cause significant environmental effects. Direct impacts that would occur with development and associated population growth are evaluated in appropriate sections of this DEIR. This impact is considered* ***less than significant****.*

The proposed project includes the construction of new housing, which would result in direct increases in population at the project site. The proposed project would develop up to 900 multifamily residential units. Based on a factor of 2.25 persons per dwelling unit provided by city staff, these homes are estimated to generate 2,026 new residents in the city at projected buildout (assumed to be 2011).

The population of the city on January 1, 2005, was 40,206 persons (California Department of Finance 2005). Based on the General Plan projections, the population would be approximately 71,900 people by 2010 and 78,300 people by 2015 (Table 3.2-1). Therefore, the General Plan projects an additional 31,694 persons by 2010 and 38,094 additional persons by 2015 compared to the existing city population. SACOG estimates population for the city to be 48,410 residents by 2010 and 57,730 residents by 2015 (Table 3.2-1), approximately 8,204 and 17,524 additional persons, respectively, compared to the current population. Development of the proposed project would occur between 2007 and 2011 and is expected to generate 2,026 new residents during this timeframe. Therefore, the project would not generate population growth exceeding increases projected for the city as a whole by the General Plan and by SACOG.

The *Washington Specific Plan* provides population estimates for the plan area at buildout in 2015. At the time the plan was prepared (1995), the population of the plan area was 2,927 residents. This area is estimated to have a population of 4,750 persons at buildout of the plan area in 2015 (Table 3.2-1). The proposed project would generate approximately 2,026 persons, resulting in the plan area population exceeding the projected population of 4,750 residents (assuming there are still at least 2,927 existing residents). In addition, the maximum allowable population under the current development agreement and General Plan zoning for the proposed project sites is 1,263 persons (Table 3.2-5). However, the proposed project is expected to generate 2,026 persons, which would exceed projected population for the proposed project site.

Table 3.2-5
Population Estimates for the Raley's Landing Project Site

	Maximum Project Site Population under Current Planning Documents			Population Associated with the Proposed Project		
	River 1, 2, 3 Areas	Washington Street Property	Total	River 1, 2, 3 Areas[1]	Washington Street Property	Total
Dwelling units	218[2]	343[3]	**561**	350	550	**900**
Persons[4]	491	772	**1,263**	788	1,238	**2,026**

1 The calculation for the River 1, 2, and 3 areas assumes no hotel would be developed.
2 Development agreement and PD-30 zoning assume 218 units for River 1, 2, and 3 areas.
3 The property is zoned WF with a PD-43 overlay, which allows residential density of between 25.1 and 50 units per acre. Using the acreage of the Washington Street property (6.86 acres) and the maximum units per acre (50 units) would total 343 units.
4 Persons were calculated based on 2.25 persons per dwelling unit.
Source: Compiled by EDAW 2005

Because the Raley's Landing project would generate population growth that exceeds estimates in the *Washington Specific Plan* and allowed under development agreements and General Plan zoning, the project would result in unplanned population growth in the area. Population growth by itself is not considered a significant environmental impact. However, development of housing, infrastructure, and facilities and services to serve this growth can have significant impacts on the environment through land conversions, commitment of resources, and other mechanisms. Direct impacts associated with the development needed to accommodate increased population are evaluated in appropriate sections in this DEIR (e.g., Section 3.3, "Transportation and Circulation"; Section 3.6, "Public Services"; and Section 3.7, "Public Utilities"). Potential inconsistencies with local planning documents (e.g., General Plan and *Washington Specific Plan*) that may lead to significant environmental impacts are also evaluated in each section. However, inconsistencies solely between planned and anticipated population growth as described here would not cause significant environmental effects. Therefore, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.2-3 **Population, Employment, and Housing — Increased Housing Supply and Employment Opportunities.** *Development of the proposed project would increase the number of housing units and jobs. At full buildout, the jobs-housing index for the proposed project would be 0.40, indicating that the proposed development would be jobs rich. When considered in conjunction with related current and future residential projects in the city, overall housing opportunities in the city should increase. The project would not induce substantial new housing demand. This impact is considered* ***less than significant****.*

The proposed project provides for several varieties of commercial development, including office/commercial, retail, restaurant uses, and potentially the development of a hotel and conference center. This analysis assumes the project scenario under which the greatest disparity between jobs and housing would occur; 850 multifamily housing units and a 300-room hotel would be developed, resulting in 3,253 jobs and 1,314 employable residents (DKS Associates 2005) at full buildout in 2011. As shown in Table 3.2-6, the jobs-housing index for the project would be 0.40, which indicates that the project would be highly job rich.

Table 3.2-6
Jobs-Housing Index for the Raley's Landing Development

Employment (number of jobs)[1]	3,253
Total housing units[2]	850
Households[3]	816
Employed residents[4]	1,314
Jobs-housing index[5]	0.40

[1] Number of jobs was calculated based on generation rates derived by DKS Associates (2005) for the proposed project. This includes office/commercial, retail shopping center, restaurant uses, and a 300-room hotel.
[2] With development of the hotel, the number of housing units would be reduced from 900 units to 850 units.
[3] Assumes 1 housing unit = 0.96 household (Source: U.S. Census Bureau 2002 [2000 data for Yolo County]) to account for unoccupied housing units.
[4] Assumes estimated number of employees per household would remain at the SACOG countywide estimate of an average of 1.61 through 2025 (SACOG 2001a). The SACOG city-wide estimate of 2.43 employees per household was not used for calculating the number of employed residents because it is greater than the assumption that there would be 2.25 persons per dwelling unit.
[5] Jobs-housing index = employed residents/number of jobs.
Source: Compiled by EDAW 2005

At full buildout, housing on the project site would be unable to accommodate approximately 2,403 of the employees working on-site (3,253 jobs and 1,314 employed residents). These employees would generate demand for approximately 1,493 housing units that are not proposed as part of the Raley's Landing project. If these workers did not live in West Sacramento or could not be accommodated by housing units in the city, then new housing units outside the city would be needed to meet the housing demand generated by the proposed jobs.

As discussed above in the "Existing Conditions" section, the jobs-housing index for Yolo County was 0.82 in 2000, indicating an imbalance between housing (i.e., reflected as employed residents) and jobs, with employment growth outpacing housing growth (Table 3.2-2). This index indicates that Yolo County had more jobs than employed residents in 2000 and that the county supported a net in-commuting population. The jobs-housing index for the county is projected to increase to 0.96 in 2010 and remain greater than 0.90 through 2025. These changes in the jobs-housing index indicate that as project development continues in the region, the jobs-housing index would become more balanced, but the number of jobs would still exceed the number of employed residents living in the county.

Housing and employment in West Sacramento is currently close to balanced, with a jobs-housing index of 0.92 in 2000. The job-housing index is projected to remain equal to or greater than 0.90 through 2025 (Table 3.2-3). Although nearly balanced, projections indicate the number of jobs would still exceed the number of employed residents living in the city. Because the proposed project would generate more jobs than employed residents, it could be considered a contributor to available jobs in the city, increasing the gap between the number of jobs and the number of employed residents and leading to a related increase in housing demand. However, when looked at in conjunction with related current and future housing projects in the city, overall housing opportunities in the city should increase parallel with increased housing demand. In addition to the multifamily housing proposed by the Raley's Landing project, the Rivers development, located north of the proposed project, is planned for 1,139 single-family and multifamily units, and the Triangle Specific Plan area, south of the project, is planned for up to 5,000 high-density residential units. It is expected that as project development continues in the region, the jobs-housing index would remain relatively balanced, and these future developments would provide housing in the city to accommodate workers on the project site. Because the project is not anticipated to generate substantial demand for new housing relative to available supply, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.2-4 **Population, Employment, and Housing — Consistency with Housing Goals and Policies.** *The General Plan and the* Washington Specific Plan *identify various goals, policies, and implementation programs related to the provision of affordable housing and housing for people with special needs. The City's affordable housing ordinance identifies numeric goals associated with the provision of affordable housing in the city. The developers would coordinate with the City to ensure compliance with the City's affordable housing policy through one or more available mechanisms. This impact is considered* **less than significant***.*

The proposed project would include office uses, commercial/retail uses, and up to 900 multifamily residential units. Construction of higher density housing in association with commercial/retail land uses would ensure consistency with City General Plan Housing Element Goal D and Policies D.1 and D.3 and with *Washington Specific Plan* Policy 2.C.1, which encourage residential development in proximity to commercial services and employment centers.

City General Plan Housing Element Goal F and Policies A.1, A15, and F.1 and Land Use Element Policy B.2 discuss the provision of affordable housing for individuals with disabilities, very low- and low-income households, large families, senior citizens, farmworkers and their families, female-headed households with children, and others with special needs. The City's affordable housing ordinance (Chapter 15.10 of the City's Municipal Code) provides more specific guidance regarding the provision of affordable housing in the city. The ordinance calls for at least 15% of new and substantially rehabilitated dwelling units developed in the General Plan area to be affordable to low- and moderate-income households, and 40% of these units would be available at a cost affordable to very low income households. Several options are available for meeting the City's affordable housing requirements: Some units on the project site may qualify as affordable housing; some affordable units may be constructed off-site, and the developer would construct them or fund their construction; or the developer may pay a fee to the City to fund the future construction of affordable housing or the redevelopment of existing housing into affordable housing. The Raley's Landing project applicants are currently coordinating with the City and will continue to coordinate with the City to ensure compliance with the City's affordable housing policy through one or more of these mechanisms. For these reasons, the proposed project is considered consistent overall with the City's housing policies. This impact would be considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

3.3 TRANSPORTATION AND CIRCULATION

This section presents key assumptions, methods, and results of an analysis of the transportation and circulation impacts of the proposed Raley's Landing project.

3.3.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to transportation and circulation are applicable to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The proposed Raley's Landing project would generate demand for travel that would affect the number of vehicle trips using state highways and ramps. For this reason, several state highway facilities have been included in the transportation and circulation study area. The California Department of Transportation (Caltrans) establishes performance standards that apply to specific routes and publishes those standards in transportation concept reports (TCRs). Performance standards in TCRs are often expressed as level-of-service (LOS) standards. (Note: the concept of LOS is described in more detail later in this section.) Caltrans establishes reasonable LOS standards for state highway facilities, based on current operating conditions, surrounding land uses, local policies, and current plans for improvement on the facility.

For this project, two TCRs were used as references:

- *State Route 50 Transportation Concept Report* (Caltrans 1998) and
- *Interstate 5 Transportation Concept Report* (Caltrans 1997).

Caltrans indicated that for both routes (i.e., State Route 50 [referred to as U.S. 50 in this EIR] and Interstate 5 [I-5]), updates of the TCRs are currently underway; however, the existing TCRs were used for this analysis. The key I-5 segment of interest for the Raley's Landing project is Segment 3, running from the South Land Park overcrossing to I-80 and including the downtown Sacramento section. The "Concept LOS Standard (2016)" for this segment is E (Caltrans 1997). The key U.S. 50 segments of interest for this project are Segment 1 (I-80 to the Yolo-Sacramento County line) and Segment 2 (Yolo-Sacramento County line to the U.S. 50/SR-99 interchange). The "Concept LOS" for Segment 1 is E and for Segment 2 is F (Caltrans 1997).

Caltrans has also published guidelines for traffic impact analysis that were used for evaluation of state highway facilities for this project (Caltrans 2002).

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of West Sacramento

In the city of West Sacramento, the primary regulatory measures related to transportation and circulation are found in the General Plan and are administered by the City itself. The City's General Plan identifies LOS standards for streets and roadways, which it seeks to maintain (City of West Sacramento 2004).

The City's current LOS standard is:

- LOS C or better at all locations, except…

- …at intersections and on roadway segments within one-quarter mile of a freeway interchange or bridge crossing of the Deep Water Ship Channel, barge, canal, or Sacramento River, where LOS D is acceptable (City of West Sacramento2004).

The City has also established guidelines for performing traffic analyses (City of West Sacramento 2005). The guidelines define methods, assumptions, and techniques for evaluating transportation conditions on city facilities, as well as for estimating the impact of development or transportation facility projects. These guidelines are used for evaluating city facilities and the impacts of the proposed project.

The City has sought and continues to seek revenues from many sources to fund transportation improvements necessary to maintain desired LOS standards in the city. Federal, state, and regional funding sources cover only a part of the costs needed to make the necessary transportation improvements. To fully fund the improvements, the City in 1994 established a traffic impact fee, which applies to all new development (with some special guidelines for development in identified redevelopment areas). The fee was last updated in June 2001 (City of West Sacramento 2001). There is another update of the fee currently under way, and it will be considered by the City Council in fall 2005. A draft list of improvement projects that have been developed for this ongoing update of the fee was used to define the transportation facilities that would be in place for future/cumulative conditions for this project.

The Owner Participation Agreement (OPA) prepared by the City of West Sacramento Redevelopment Agency for the earlier Raley's Landing project identified a variety of traffic improvements, most of which have already been implemented.

City of Sacramento

The proposed Raley's Landing project would generate demand for travel that would affect the number of vehicle trips on some surface streets in the city of Sacramento. For this reason, and after coordination with City of Sacramento staff, several study intersections in the city of Sacramento were included in the evaluation of this project. The City of Sacramento has established LOS standards, thresholds of significance, and guidelines for preparation of traffic studies that were used for this project analysis (City of Sacramento 1996). For intersections included in this traffic analysis, LOS C or better was used as the acceptable service standard.

3.3.2 EXISTING CONDITIONS

Information on the existing transportation system was assembled from field observations, aerial photographs, and information available from the City of West Sacramento, the City of Sacramento, and Caltrans.

STUDY AREA

Because the proposed project would generate travel demand that would require use of roadway, transit, and pedestrian facilities outside the immediate project area, the transportation and circulation study area for this project includes areas well beyond the project area. These facilities are illustrated in Exhibit 3.3-1 and described below.

State Highway Facilities

I-5 is a north-south interstate freeway running along the east bank of the Sacramento River in the project study area. In the Sacramento region, I-5 connects from the city of Woodland in the north to the city of Elk Grove and Laguna West area of Sacramento County in the south. I-5 provides access to downtown Sacramento and the Sacramento International Airport. It is also a key route for interregional and interstate travel, especially commercial and truck travel. I-5 has a minimum of two travel lanes in each direction. Through downtown

Sacramento, the number and designation of travel lanes on I-5 varies from three to five, with additional auxiliary lanes in some locations.

U.S. 50 is a freeway that traverses the study area in an east-west direction and has a major interchange with I-5 in the east end of the study area. The western terminus of U.S. 50 is I-80 in the city of West Sacramento, and it extends eastward through Sacramento, Folsom, El Dorado County, South Lake Tahoe, and on to the state of Nevada. U.S. 50 has eight travel lanes between I-80 and State Route (SR) 275 and six travel lanes between SR 275 and I-5. It provides access to the project area through two interchanges: Jefferson Boulevard/SR 275 and South River Road. The portion of U.S. 50 in the project vicinity is also sometimes referred to as “Business 80” and the “Capital City Freeway.”

Surface Streets

The following surface streets in West Sacramento either provide direct access to one or more portions of the project site or provide connections from the project area to other major streets and state highways.

Third Street is a north-south collector roadway that runs parallel to the western edge of the Sacramento River. It starts at B Street on the north and ends at South River Road in the south. Third Street is currently grade separated from Tower Bridge Gateway (the portion of old SR 275 extending from the Tower Bridge to the junction with U.S. 50), with an off-ramp from westbound Tower Bridge Gateway. To go from Third Street to Tower Bridge Gateway eastbound, a driver must travel south under Tower Bridge Gateway, turn left onto South River Road, and then turn right onto Tower Bridge Gateway. Third Street has two lanes southbound and one lane northbound between G Street and West Capitol Avenue. North of G Street, Third Street has one lane in each direction. The River 1 area and the Washington Street property have direct access to Third Street. All project parcels, except the River 2 area, front Third Street. The River 2 area has access Third Street indirectly via F Street. Currently, access to the parking structure entrance for the Ziggurat is from Third Street.

Fifth Street is a four-lane, north-south arterial roadway that connects A Street to West Capitol Avenue. It also connects to Lighthouse Drive north of A Street. Fifth Street connects to Tower Bridge Gateway, C Street, and F Street and therefore is an important access road to the project area. The Washington Street property is the only portion of the project site that has direct access to Fifth Street.

E Street is a two-lane, east-west local roadway, extending from West Street on the west to Second Street on the east. In the immediate project area, E Street is mainly residential. The River 3 area is the only portion of the project site that has direct access to E Street.

F Street is an east-west collector roadway that connects Jefferson Boulevard on the west and Second Street on the east. In the immediate project area, F Street is mainly residential; west of Fifth Street, F Street provides access to commercial and industrial uses. The River 2 and River 3 areas are the only portions of the project site that have direct access to F Street.

G Street is a short two–lane, east-west local roadway that extends from Eighth Street to Third Street. It ends at Third Street, at the driveway to the Ziggurat parking structure. The Washington Street property is the only portion of the project site that has direct access to G Street.

C Street is a two-lane, east-west arterial roadway that forms the north boundary of the transportation and circulation project study area. As it approaches the Sacramento River from its intersection with Third Street, C Street is realigned southward and then eastward and becomes I Street in the city of Sacramento as it crosses the river. As it proceeds westward from Third Street, C Street is realigned southward and then westward again, becoming Sacramento Avenue. No portions of the project site have direct access to C Street.

Tower Bridge Gateway (SR 275) is a four-lane arterial roadway that was designated as a state highway when first constructed. The roadway was relinquished by the state to the City of West Sacramento in June 2000. Tower

Bridge Gateway traverses the study area in an east-west direction. It branches off from U.S. 50 near Jefferson Boulevard on the west and provides access to downtown Sacramento on the east. Tower Bridge Gateway crosses the Sacramento River at the Tower Bridge and becomes Capitol Mall on the east side of the river. The road provides access to the project area at West Capitol Avenue, Third Street, and Fifth Street but does not provide direct access to any portions of the project site.

Jefferson Boulevard is a four-lane arterial roadway that runs north-south on the west end of the study area. It starts at Sacramento Avenue on the north, traverses the entire city of West Sacramento, and ends at the Yolo/Solano County line to the south. North of Sacramento Avenue, Jefferson Boulevard becomes Kegle Drive, which is a local road. Jefferson Boulevard provides access to U.S. 50, Tower Bridge Gateway, West Capitol Avenue, and F Street.

South River Road is a north-south collector roadway that runs along the west bank of the Sacramento River in the city of West Sacramento. The northern terminus of South River Road is Tower Bridge Gateway, and on the south it merges into SR 160. Currently, South River Road does not have a bridge crossing of the barge canal; however, preliminary design and environmental work are underway for a bridge crossing. South River Road is an important roadway for the proposed project because it connects the project area to U.S. 50.

Sacramento Avenue technically has its western terminus at the railroad tracks west of Sunset Avenue in the city of West Sacramento, and runs east-west as a four-lane arterial roadway from that point to Jefferson Boulevard. From Jefferson Boulevard east, Sacramento Avenue is a two-lane arterial roadway, transitioning to C Street at about Sixth Street. Third Street and Fifth Street intersect C Street, providing traffic access to the project area. From the railroad tracks west, Sacramento Avenue transitions to Reed Avenue and connects to I-80 on the west. Sacramento Avenue provides direct access to downtown Sacramento and I-80.

Riske Lane is a two-lane, north-south collector roadway that connects from South River Road, near the U.S. 50 westbound off-ramp, to West Capitol Avenue and Tower Bridge Gateway.

West Capitol Avenue is an east-west arterial roadway that extends from Third Street on the east to I-80 at the Enterprise interchange on the west. East of Merkley Way, West Capitol Avenue is a minor arterial, providing access to motels, mobile home parks, and residential uses in the vicinity of the project area; west of Merkley Way, West Capitol Avenue is a major arterial roadway, providing access to mixed commercial and residential uses fronting the street. The Washington Street property and the River 1 area are the only portions of the project site that directly border West Capitol Avenue. However, the connection to the Washington Street property will be temporary because the portion of West Capitol Avenue between Third Street and Fifth Street will be abandoned when the city constructs planned improvements to Tower Bridge Gateway.

Although the project is located in the city of West Sacramento, because of its proximity to the city of Sacramento, travel between the project and the city of Sacramento would occur. Also, some trips to or from the project site would use streets in the city of Sacramento to access state highways. For this reason, several streets in the city of Sacramento were included in the transportation and circulation study area for the project.

Third Street in downtown Sacramento extends from I Street in the north to Broadway in the south. Third Street provides access to I-5 at J Street, L Street, P Street, and Q Street.

Capitol Mall is the easterly extension of Tower Bridge Gateway, terminating at the state Capitol Building. Capitol Mall provides three travel lanes in each direction. A majority of the land uses along Capitol Mall are offices.

Front Street is a north-south roadway that runs parallel to the eastern edge of the Sacramento River, extending from Capitol Mall to Old Sacramento.

Jibboom Street is a north-south roadway, connecting Richards Boulevard in the north to I Street in the south.

Richards Boulevard connects to I-5 and to Jibboom Street.

I Street is an east-west arterial roadway. East of I-5, I Street is one-way westbound. West of I-5, I Street crosses the Sacramento River and connects to C Street in the city of West Sacramento. I Street provides access to I-5 on-ramps, both north and south.

J Street is an east-west arterial roadway that connects I-5 to downtown Sacramento. East of I-5, J Street is one-way eastbound. I-5 north and south has off-ramps to J Street. West of I-5, J Street provides access to Old Sacramento.

L Street is a three-lane, east-west arterial roadway, terminating at I-5 on the west and running through downtown and midtown Sacramento on the east. It is one-way westbound and provides an on-ramp to I-5 north at Third Street.

P Street is a three-lane, westbound arterial roadway, connecting to on-ramps to I-5 north and south at Third Street.

Q Street is a three-lane, eastbound arterial roadway, connecting to off-ramps from I-5 north and south at Third Street.

Bridges

Three bridges cross the Sacramento River in the vicinity of the project site: the Tower Bridge, I Street Bridge, and Pioneer Bridge. The roadways connecting to these bridges are described in detail above. The characteristics of each bridge are described here.

The Tower Bridge is operated and maintained by Caltrans, has four travel lanes, and connects the city of West Sacramento and downtown Sacramento over the Sacramento River. The Tower Bridge includes sidewalks on each side and serves as a major pedestrian connection between Old Sacramento and attractions in the city of West Sacramento, such as Raley Field. It is also a designated bike route. The Tower Bridge has a manually controlled, operable span to allow for the passage of boats. The bridge opening begins when a call is placed to the bridge operator by a boat. The bridge-raising process starts with the lowering of booms to block traffic coming onto the bridge. Once clear, the operable span is raised. After the boat completes the passage, the span is then lowered, the gates are reopened, and the bridge returns to normal operation. This entire process takes 8-12 minutes to complete, depending on the time it takes to clear traffic from the bridge and for the boat to complete its passage. The raising and lowering of the bridge is almost exclusively associated with the Riverboat Cruises, which typically occur weekdays, with six outbound passages between 11:00 a.m. and 4:00 p.m., and again 45 minutes later, when the cruises return. April through October, there are also scheduled Friday evening cruises departing at 5:30 p.m. and 7:30 p.m. Data provided by Caltrans showed an average of 128 boat passages per month, with a low of 36 in March and a high of 237 in June.The I Street Bridge is a pivot bridge and has one travel lane in each direction. A pedestrian walkway is provided on the south side of the bridge. In addition to vehicle travel lanes, the bridge also carries intercity and interstate passenger trains, as well as freight trains. The train tracks are on a separate platform below the vehicle lanes.

Pioneer Bridge is the U.S. 50 freeway bridge over the Sacramento River, with three mixed-flow and two auxiliary travel lanes in each direction.

Transit System

Primary transit service in the project area is provided by Yolobus. Current Yolobus service extends between downtown Sacramento, West Sacramento, Davis, and Woodland. Routes 40, 41, and 42 of Yolobus operate local bus service in the study area. Yolobus also operates a River Cats shuttle bus service between Southport and Raley Field for all games. Regional Transit (RT) also operates a shuttle between the Ziggurat and downtown Sacramento. Transfers and connections can be made to Unitrans and Citylink in Davis and to Regional Transit buses and light rail in Sacramento.

Pedestrian and Bicycle Facilities

Pedestrian facilities along the study area vary according to location. The city of West Sacramento provides pedestrian and bike access on most of its roadways. Fifth Street, Third Street, and West Capitol Avenue are heavily used by pedestrians.

On West Capitol Avenue, sidewalks are generally provided on both sides of the roadway, primarily located immediately behind the rolled curb at the edge of the roadway. At a few locations, paved shoulders accommodate pedestrian travel. West Capitol Avenue is designated as a bike route from the Yolo Bypass across the Tower Bridge to Sacramento, under the city's Bike and Pedestrian Plan. The city's General Plan specifies promoting the areas along the Sacramento River between the I Street Bridge and the barge canal as pedestrian-oriented commercial centers of West Sacramento. The recently completed portion of River Walk Park between the I Street Bridge and the Tower Bridge represents the first phase of this plan.

A major upgrade of the pedestrian crossing of the Tower Bridge has been designed, and environmental review of the improvement is complete. The improvement would widen the existing pedestrian crossings for the entire span of the bridge.

Major Traffic Generators and Special Uses

The Ziggurat is located between the River 1 and River 2 areas of the project site (Exhibit 2-2). The building is currently leased by the State of California Department of General Services, which has approximately 1,500 employees at the site. The Ziggurat has a parking structure, with entry from Third Street and the exit at F Street.

Raley Field (Exhibit 3.3-1), a AAA minor league baseball park, is home to the River Cats baseball team. The stadium has a maximum seating capacity of 14,680. In total, the River Cats play about 70 games per season at Raley Field, with an average attendance of about 11,000. A small number of music and other events are scheduled at Raley Field. Because it is an outdoor venue, all events occur between April and September. Until recently, vacant lots on the north side of Tower Bridge Gateway, including parts of the Washington Street property, have been used for game and event parking. This baseball season, the majority of game and event parking is provided south of Tower Bridge Gateway and the ball field. The city and Raley Field implement a traffic control plan to direct game and event attendees to and from the ball field.

Old Sacramento (Exhibit 3.3-1) is a national landmark and a tourist attraction in downtown Sacramento. It is located west of I-5 between Second Street and the Sacramento River. It can be accessed from Front Street, Capitol Mall, Third Street, and I Street. Old Sacramento is within walking distance of the State Capitol, downtown, and the Crocker Art Museum. It features many attractions, such as a waterfront, excursion cruises, restaurants, a waterfront hotel, and the California Railroad Museum.

EXISTING ROADWAY OPERATING CONDITIONS

Determination of roadway operating conditions is based on comparison of traffic volumes to roadway capacity. Level of service (LOS) is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs. LOS is designated A through F, from best to worst, which covers the entire range of traffic operations that might occur. LOS A through E generally represents traffic volumes at less than roadway capacity, whereas LOS F represents overcapacity and/or forced conditions. Table 3.3-1 presents the LOS definitions.

City of West Sacramento Roadways

Two types of LOS analyses were performed for City of West Sacramento roadways:

- peak-hour LOS for surface street intersections and

- segment LOS based on daily traffic volume thresholds.

At signalized surface street intersections, LOS was calculated using a modified version of "Circular 212" or "critical movement analysis," per City guidelines. This method bases LOS purely on calculated volume-to-capacity ratios. At unsignalized surface street intersections, LOS was calculated using Year 2000 Highway Capacity Manual methods. The methods differ, depending on whether the intersection is a "minor-street-stop-only" (i.e., the major street does not have a stop sign) or an "all-way-stop" intersection. Both methods evaluate LOS based on estimates of average driver delay.

For all intersections, LOS is calculated for both a.m. and p.m. peak hours. Lane geometry for each intersection is shown in Exhibit 3.3-2. Peak-hour vehicle turning volumes are shown in Exhibit 3.3-3. Calculated peak-hour LOS for study intersections in the city is presented in Table 3.3-2. All intersections function at LOS C or better.

Daily volume LOS thresholds for different classes of roadway in the city are presented in Table 3.3-3. Current LOS conditions for project analysis segments using these thresholds are presented in Table 3.3-4. All segments are rated as LOS A or B based on these thresholds.

State Highway Facilities

Freeway merge, diverge, and weaving segment analyses were conducted using a.m. peak-hour and p.m. peak-hour traffic volumes. Merge and diverge analyses evaluate the ability of vehicles to enter and leave the freeway during peak travel periods. Weaving analyses evaluate the ability of vehicles to weave near freeway ramps during peak travel periods. Table 3.3-5 presents calculations of existing LOS on state highway facilities.

All facilities operate at LOS D or better, except the following:

- The weaving section on U.S. 50 eastbound between South River Road and I-5 connector lanes operates at LOS E during both a.m. and p.m. peak hours. The poor LOS is attributable to a high volume of vehicles moving from the eastbound mainline lanes to reach the I-5 connector, weaving across vehicles entering U.S. 50 eastbound from both the Jefferson Boulevard and South River Road on-ramps.

- The weaving section on I-5 northbound between the P Street on-ramps and the J Street off-ramps was calculated to operate at LOS E during the p.m. peak hour.

- The weaving section on I-5 southbound between the J Street on-ramps and the Q Street off-ramps was calculated to operate at LOS E during the p.m. peak hour.

City of Sacramento Surface Street Intersections

Peak-hour intersection LOS was calculated for seven signalized intersections in the city of Sacramento. The City of Sacramento requires use of Year 2000 Highway Capacity Manual Operations methodology for calculating peak-hour LOS. Intersection lane configurations and peak-hour traffic volumes shown in Exhibits 3.3-2 and 3.3-3 were used for the calculations. Current intersection LOS conditions are presented in Table 3.3-6.

All study intersections operate at LOS C or better, except for the intersection of Third Street and J Street, which was calculated to operate at LOS D during the a.m. peak hour.

3.3.3 Impacts and Mitigation Measures

Analysis Methodology

Project impacts are defined by forecasting future travel demands for two project scenarios and comparing those forecasted demands to "no-project" scenarios. The forecast scenarios are:

- existing plus project (compared to "existing" conditions to identify project impacts) and
- cumulative plus project (compared to "cumulative-no-project" conditions to identify project impacts).

This section of the report presents the analysis methods used to forecast the future project scenarios and the "no-project" comparison scenarios. The standards and thresholds for identifying and classifying project impacts are also defined.

Future Scenario Definitions

The existing plus project scenario is generated by estimating the number of vehicle trips that would be generated by the project, determining a reasonable distribution of those trips, and adding them to existing traffic counts. The LOS analysis as presented in the "Existing Conditions" section is repeated with the existing plus project scenario traffic volumes. Exhibit 3.3-4 shows the existing plus project peak-hour turning movements.

The cumulative scenario is defined as near-buildout of the current General Plan in the city of West Sacramento, and Year 2025 SACOG Projected Population and Employment for all areas outside the city .

This scenario is forecasted using the City of West Sacramento travel demand model (DKS Associates 2005). In general, the City travel demand model is a refined version of SACOG's regional travel demand model, adapted for use by the City for local planning purposes. The model is a so-called "four-step" travel demand model, implemented with Citilabs TP Plus® and MINUTP® software. The key model inputs are future forecasts of demographic variables (housing, population, and employment) and transportation networks (primarily roadway and transit facilities).

The cumulative no-project scenario represents the cumulative condition as defined above, but with *no development present* on the project site.

The cumulative plus project scenario represents the cumulative condition as defined above, but with the proposed project built on the project site.

City staff has instructed all traffic consultants doing work for the City to use the City travel demand model to forecast cumulative plus project conditions directly from the travel demand model. This approach ensures that as project approvals are granted, the City travel demand model dataset includes the full extent of approved development. Cumulative no-project conditions are forecasted by manually subtracting estimated project trips from the cumulative plus project traffic volumes.

Cumulative No-Project Conditions

Cumulative no-project conditions assume that major roadway improvements planned and funded by the City of West Sacramento are completed. The most significant improvement that directly affects the Raley's Landing project is the conversion of Tower Bridge Gateway from its current configuration (limited or controlled access) with no intersections at grade, to an arterial street, with three at-grade intersections. These new at-grade intersections are shown in Exhibit 3.3-1 as future intersections:

- Third Street/Tower Bridge Gateway (#5 in Exhibit 3.3-1),
- Fifth Street/Tower Bridge Gateway (#10 in Exhibit 3.3-1), and
- Garden Street/Tower Bridge Gateway (#16 in Exhibit 3.3-1).

Other transportation projects assumed to be completed in the city are:

- Sacramento Avenue widening to four lanes (two in each direction) from Jefferson Boulevard to the I Street Bridge;

- South River Road bridge and improvements to South River Road north of the barge canal (currently in preliminary design and environmental review);

- completion of the Jefferson Boulevard widening to four lanes (U.S. 50 to Marshall Road, including widening of the barge canal bridge);

- Palamidessi Bridge widening to six lanes (three lanes in each direction);

- widening of other major arterial roadways (Harbor Boulevard, Industrial Boulevard, and others); and

- upgrades of all freeway interchanges (Reed Avenue/I-80, Enterprise Boulevard/I-80, Harbor Boulevard/U.S. 50, Jefferson Boulevard/U.S. 50, and South River Road/U.S. 50).

Cumulative no-project conditions also assume that service frequencies of existing transit services in West Sacramento would increase, and that new transit service would be provided in growth areas, and that a transit center is developed at Merkley Way. No light rail or trolley service connecting from Sacramento into West Sacramento was assumed for this project analysis.

Outside the city , cumulative no-project conditions assume that year 2025 roadway and transit improvements included in the most recent Metropolitan Transportation Plan are completed.

Exhibit 3.3-5 shows assumed cumulative no-project intersection geometry at study intersections. Exhibit 3.3-6 shows cumulative no-project peak-hour turning movements.

Project Trip Generation

The cumulative scenario forecasting approach described above requires that manual calculations of project trip generation, consistent with the representation of the project in the city travel model, be prepared for each traffic impact analysis. This process is required to allow for project-added traffic to be isolated from surrounding areas and to allow for more detailed representation of vehicle access to and from the project areas than the city travel model allows. The starting point for calculation of vehicle trip generation for the project is rates and formulas for calculating vehicle trips published by the Institute of Transportation Engineers (ITE). Rates used for this project are shown in Table 3.3-7. Trip generation for the project calculated using these rates, with no adjustments, are shown in Table 3.3-8. As discussed in Chapter 2, “Description of the Proposed Project,” the River 1 area includes two potential residential/hotel development scenarios: 200 residential units or a 100- to 300-room hotel and 150 residential units. Trip generation calculations used for this analysis assumed a 300-room hotel and 150 residential units because this scenario would result in the maximum potential trip generation.

Peak-hour vehicle trips estimated by the City travel demand model were in general lower than the trip rates shown in Table 3.3-8. Reasons for this difference are:

- ITE trip rates are based primarily on surveys of land uses in suburban areas, which have lower transit and nonmotorized trip rates than land uses in urban areas like the proposed project area.

- ITE trip rates are based on surveys of many “single use” land uses, where the potential for internalization of trips is lower than for mixed-use areas like the proposed project area.

- The City travel model accounts for higher nonmotorized and transit mode shares for a dense, mixed-use project in an urban area like the proposed project area.

For these reasons, the ITE trip generation rates were adjusted to reflect these factors. Table 3.3-9 provides the calculation of vehicle trip reduction factors that were applied to the ITE trip generation rates. It was assumed that the regional average vehicle trip mode split for residential uses (94.8%) and employment uses (95.5%) were reasonable reflections of vehicle mode split for ITE trip generation survey sites. Based on output from the City travel demand model, the vehicle trip mode share for residential uses in the project is 81.9% and for employment uses is 89.2%. Additionally, it was assumed that internalization of trips of 15% for the employment uses would occur, because of the mix of uses in the project. With these adjustments in place, the manual trip generation calculation for the project matched the peak-hour vehicle trips predicted by the City travel model.

The adjusted trip generation for the project is presented in Table 3.3-10. The net effect of the adjustments is a reduction of 18–20% of the vehicle trips generated by the project, compared to typical ITE trip generation calculations.

Based on these calculations, implementing the project would generate 19,275 daily vehicle trips, with 1,941 occurring during the a.m. peak hour, and 2,084 occurring during the p.m. peak hour.

Project Trip Distribution and Routing

Project trip distribution and routing were based on outputs of the City travel demand model.

Table 3.3-11 provides the distribution of trips for the project. "Distribution" refers to the locations where future residents and employees of the project are most likely to travel, work, shop, go to school, and so on in the course of their daily activities. The distribution of trips varies by trip purpose and by type of use.

"Routing of trips" refers to the specific roadways that are used to get to a specific location. Routing of the project-added vehicle trips is illustrated in Exhibit 3.3-7. Exhibit 3.3-8 identifies cumulative plus project peak-hour turning movements.

The project applicants provided a diagram listing general locations of driveways on the project site, which was used to identify likely vehicle entry and exit points on the project site. This information was used for routing of trips from the project parcels to the adjacent streets. The following general rules were applied in determining what routing to assume for each portion of the project site:

- Primary access to Washington Street property parking was assumed via Fourth Street. Driveway access to Third and Fifth Streets was assumed to be right-in/right-out only.
- The only access to the River 1 area was assumed via Third Street. An access point on the northwest corner of the parcel was assumed to be right-in/right-out only on the northbound lane and left-in only on the southbound lane.
- Primary access to the River 2 area was assumed via F Street.
- Primary access to the River 3 area was assumed via E Street, with secondary access via F Street.

Forecasts of LOS at Study Locations, with and without Project

City of West Sacramento Intersections and Roadway Segments

Table 3.3-12 provides comparisons of existing and existing plus project forecasts of peak-hour intersection LOS for study locations in the city. The following intersections change from acceptable to unacceptable LOS when project traffic is added to existing traffic:

- Third Street/G Street intersection (p.m. peak hour) and
- Jefferson Boulevard/Sacramento Avenue intersection (p.m. peak hour).

Table 3.3-13 provides existing and existing plus project forecasts of daily traffic volumes and thresholds for study roadway locations in the city. The following roadway segments change from acceptable to unacceptable LOS when project traffic is added to existing traffic:

- Third Street between G Street and West Capitol Avenue,
- Third Street between F and E Streets, and
- Fourth Street between G Street and West Capitol Avenue.

Table 3.3-14 provides comparisons of cumulative no-project and cumulative plus project forecasts of peak-hour intersection LOS for study locations in the city. The following intersections operate at an unacceptable LOS, even with no added project traffic:

- Third Street/Tower Bridge Gateway intersection (a.m. and p.m. peak hours) and
- Fifth Street/F Street intersection (a.m. and p.m. peak hours).

With project traffic added, the following additional intersections dropped to an unacceptable LOS:

- Third Street/E Street intersection (a.m. and p.m. peak hours),
- Third Street/G Street intersection (p.m. peak hour), and
- Fifth Street/G Street intersection (a.m. and p.m. peak hours).

Table 3.3-15 provides cumulative no-project and cumulative plus project forecasts of daily traffic volumes and thresholds for study roadway locations in the city. The following roadway segment surpasses suggested daily volume threshold volumes, even with no added project traffic:

- Third Street between Tower Bridge Gateway and G Street.

With project traffic added, the following additional roadway segments would have volumes above suggested thresholds:

- Third Street between F and E Streets and
- Fourth Street between G Street and West Capitol Avenue.

State Highway Facilities

Table 3.3-16 provides a tabulation of existing and existing plus project LOS on state highway facilities. All study locations were forecasted to operate at LOS E or better.

Table 3.3-17 provides a tabulation of cumulative and cumulative plus project LOS on state highway facilities. The following locations were forecasted to operate at LOS F, even with no added project traffic:

- the weaving section on U.S. 50 westbound, from the I-5 connector to the South River Road/Jefferson Boulevard off-ramps (a.m. and p.m. peak hours);

- the weaving section on U.S. 50 eastbound, from South River Road/Jefferson Boulevard on-ramps to the I-5 connector (a.m. and p.m. peak hours);

- the weaving section on I-5 southbound from the merge of the P Street on-ramp to I-5 southbound (p.m. peak hour);

- the weaving section on I-5 northbound, from the P Street on-ramp to the J Street off-ramp (a.m. and p.m. peak hours); and

- the weaving section from I-5 southbound, from J Street on-ramp to Q Street off-ramp (p.m. peak hour).

As shown in Table 3.3-17, the addition of project traffic does not change any LOS conditions.

City of Sacramento Intersections

Table 3.3-18 provides comparisons of existing and existing plus project forecasts of peak-hour intersection LOS for study locations in the city of Sacramento. The following intersection operates at an unacceptable LOS, even with no added project traffic:

- Third Street/J Street (a.m. peak hour).

No additional intersections drop to an unacceptable LOS with added project traffic.

Table 3.3-19 provides comparisons of cumulative no-project and cumulative plus project forecasts of peak-hour intersection LOS for study locations in the city of Sacramento. The following intersections operate at an unacceptable LOS, even with no added project traffic:

- Third Street/Capitol Mall (a.m. peak hour),
- Third Street/J Street (a.m. peak hour),
- Third Street/P Street (p.m. peak hour), and
- I Street/Jibboom Street (p.m. peak hour).

With project traffic added, the following intersections dropped to an unacceptable LOS:

- Third Street/Capitol Mall (p.m. peak hour) and
- I Street/Jibboom Street (a.m. peak hour).

Project Parking Analysis

An analysis of the proposed project parking demand and supply was prepared to determine the adequacy of the project parking supply. Parking demand rates used for this analysis are shown in Table 3.3-20. The rates come from a recently published manual on parking demand (ITE 2004), which provides separate parking demand rates for "urban" and "suburban" areas for most uses. The urban rates, which were used for this analysis because of the high-density residential and mixed-use nature of the proposed project, reflect a combination of lower household size, lower automobile ownership, and greater use of transit and nonmotorized travel modes, which typically occur in urban areas, relative to suburban ones.

Two rates are used in the estimate of parking demand: "average" rates, which are simply arithmetic averages of the demand rates recorded at survey sites used to prepare the ITE parking demand manual (ITE 2004), and "85th percentile" rates, which are higher than the average rates. Only 15% of the survey sites studied to prepare the ITE parking demand manual had parking demand higher than the 85th percentile rate.

Two adjustments to parking demand were taken into account for the Raley's Landing project: the potential for shared parking and the potential for "internalization" of parking demand (i.e., a portion of retail customers would be from nearby [internal] residential and office uses and would leave their cars in their existing parking spaces while visiting the retail uses). Only the River 1 area has significant potential for shared parking. In the River 1 area, the demand for the hotel parking would peak overnight, whereas demand for office parking would peak in midday. If parking is shared, it was estimated for this analysis that approximately 15% of the peak parking demand could be reduced (Urban Land Institute 1982). Internalization of demand was also considered, assuming that the commercial/retail uses incorporated on the Washington Street property and in the River 1 and River 3 areas would serve office employees, residents, and visitors. For these areas, parking demand for the commercial retail uses was reduced 20% to reflect internalization of demand. This reduction was based on output of the city travel demand model for vehicle trips and was applied as a parking demand reduction for commercial uses.

Table 3.3-21 provides a calculation of project parking demand and a comparison to parking supply for each area and for the project as a whole. In the project description, parking supply was given as a range for the Washington Street property and the River 1 area, and this is reflected in the table. A total of 4,351 to 4,651 spaces are proposed as part of the project. The demand estimate is 3,280 to 3,982 spaces. The comparison of project parking demand to parking supply shows that overall, the project provides from 371 to 1,372 more spaces than the demand estimate. The lower figure assumes 85th percentile parking demand and the minimum parking supply indicated in the project description. The upper figure assumes average parking demand and the higher parking supply figure. Therefore, overall, the project includes more than sufficient parking to meet estimated demands.

One exception to this conclusion could be parking demand/supply related specifically to the River 1 area. Parking for the River 1 area showed a potential deficit of 195 spaces if parking is supplied at the low end of the range (1,000 spaces) but demand reaches the high end of the demand range (1,195 spaces). Therefore, as designs for the River 1 area are more fully developed, the project applicants should consider providing parking at the upper end of the anticipated range (i.e., 1,200 spaces rather than 1,000 spaces) and/or allow for shared parking with other portions of the project site.

In regards to the Raley's Landing project potentially generating a parking surplus, it should be noted that the demand analysis assumes that parking demand for the residential units is at most 1.17 spaces per unit (85th percentile rate from the ITE demand manual). This assumes that most of the residential units have at most one automobile, with very few having two or more. This is a relatively conservative estimate for high-density residential parking demand, and the additional parking supply provides the option of providing more available parking spaces per dwelling unit if desired by the City or the applicants. In addition, the parking demand analysis methodology assumes 100% occupancy of all available parking spaces when demand equals the supply. Often, a parking lot or parking structure does not operate efficiently when occupancy approaches 100% because drivers must invest a relatively large amount of time to search for an available parking space. It is often beneficial to have at least a small amount of parking surplus to increase both the efficiency of parking operations and the convenience for drivers during high-demand periods.

THRESHOLDS OF SIGNIFICANCE

City of West Sacramento

The City's current LOS standard is:

- LOS C or better at all locations, except…
- …at intersections and on roadway segments within one-quarter mile of a freeway interchange or bridge crossing of the Deep Water Ship Channel, barge, canal, or Sacramento River, where D is acceptable (City of West Sacramento 2004).

For all facility types, an impact is considered significant if implementing the proposed project would result in deterioration from an acceptable LOS to an unacceptable LOS. The City's traffic impact analysis guidelines also provide the following special cases for specific facilities (City of West Sacramento 2005):

> If a signalized intersection operates at an unacceptable LOS without the proposed project, and the proposed project adds more than 0.05 to the V/C [volume-to-capacity] ratio for the intersection, this is also considered a significant impact.
>
> At unsignalized intersections, if the intersection operates at an unacceptable LOS without the proposed project, an increase of more than 5 seconds of average driver delay is considered a significant impact.

For residential streets, if the daily volume on the street is above the suggested threshold volume without the project, an increase to the daily volume of more than 25% is considered a significant impact.

State Highway Facilities

In its published Transportation Concept Reports, Caltrans establishes reasonable LOS standards for state highway facilities based on current operating conditions, surrounding land uses, local policies, and current plans for improvement of the facility.

The key I-5 segment of interest for this project is Segment 3, running from the South Land Park overcrossing to I-80, and including the downtown Sacramento or "boat" section. The "Concept LOS Standard (2016)" for this segment is E (Caltrans 1997).

The key U.S. 50 segments of interest for this project are Segment 1 (I-80 to the Yolo-Sacramento County line) and Segment 2 (Yolo-Sacramento County line to the U.S. 50/SR 99 interchange). The "Concept LOS" for Segment 1 is E and for Segment 2 is F (Caltrans 1998).

For the purpose of this project evaluation, LOS E is used as a standard. A significant impact is defined as a change from LOS E or better to LOS F. For analysis locations that do not meet the LOS standard without the project, any traffic increase generated by the project is considered to be a significant impact.

City of Sacramento

At study intersections in the City of Sacramento, an impact is considered significant if:

- the traffic generated by the proposed project degrades peak period LOS from A, B, or C (without project) to D, E, or F (with project) or
- the LOS (without project) is D, E, or F, and project-generated traffic increases the peak period average vehicle delay by 5 seconds or more.

IMPACT ANALYSIS

IMPACT 3.3-1	**Transportation and Circulation – Operation of LOS F at the Third Street/G Street Intersection under Existing Plus Project Conditions.** *Traffic added by the proposed project to existing traffic would cause the unsignalized intersection of Third Street/G Street to operate at an unacceptable LOS (LOS F). This impact is considered **significant**.*

As shown in Table 3.3-12, the addition of project traffic under the existing plus project condition would result in the Third Street/G Street intersection (Intersection #3 in the table) operating at LOS F during the p.m. peak hour. The LOS standard for this unsignalized intersection is LOS D. Without project traffic, this intersection operates at LOS A. Because project traffic degrades the LOS from A to F, this impact is considered **significant**.

Mitigation Measure 3.3-1: Provide Funding for Improvements at the Third Street/G Street Intersection (Existing Plus Project)

Mitigation for this impact would be installation of a traffic signal at the intersection, restriping the two-way-left-turn lane north of the intersection to include a dedicated southbound left-turn lane, removing the stop signs, and adding crosswalks. No change to the ROW, curb, or gutter would be required for this improvement. These improvements shall be fully funded and implemented as described in the OPA and the Public Facilities Agreement.

With implementation of this mitigation measure, the intersection would operate at LOS B during the p.m. peak hour under existing plus project conditions; therefore, this impact would be reduced to **less than significant**. Table 3.3-22 provides postmitigation LOS calculations for intersections with significant impacts under existing plus project conditions. Exhibit 3.3-9 identifies the existing plus project mitigated intersection lane geometry.

IMPACT 3.3-2 **Transportation and Circulation – Operation of LOS D at the Jefferson Boulevard/Sacramento Avenue Intersection under Existing Plus Project Conditions.** *Traffic added by the proposed project to existing traffic would cause the intersection at Jefferson Boulevard and Sacramento Avenue to operate at an unacceptable LOS (LOS D). This impact is considered* ***significant****.*

As shown in Table 3.3-12, the addition of project traffic under the existing plus project condition would result in the Jefferson Boulevard/Sacramento Avenue intersection (Intersection #12 in the table) operating at LOS D during the p.m. peak hour. The LOS standard for this signalized intersection is LOS C. Without project traffic, this intersection operates at LOS C. Because project traffic degrades the LOS from C to D, this impact is considered **significant**.

Mitigation Measure 3.3-2: Provide Fair Share Funding for Improvements at the Jefferson Boulevard/Sacramento Avenue Intersection (Existing Plus Project)

Mitigation for this impact would be adding a southbound right-turn-lane. This improvement is included in an update of the City's Traffic Impact Fee Program, which will be considered by the City Council in fall 2005, and would be funded through that program. The project applicants shall pay their fair share cost of this improvement through payment of traffic impact fees to the City of West Sacramento. Because the Traffic Impact Fee Program is being updated and the project includes two development options for the River 1 area (900 residential units or 850 residential units and hotel and conference center), the specific amount of the fee that the project applicants would pay into the Traffic Impact Fee Program is uncertain. If the fees were calculated based on the current fee schedule and based on the land use square footage and the number of dwelling units identified in the current description of the project, the project applicants would contribute approximately $7.3–7.4 million to the City's Traffic Impact Fee Program (Pascoe, pers. comm., 2005). As stated earlier, however, the City is updating its Traffic Impact Fee Program and will be approving a new fee schedule in fall 2005. If the fees were calculated based on the fee schedule currently being considered by the City Council, the project applicants would contribute approximately $8.2–8.3 million to the Traffic Impact Fee Program (Bermudez, pers. comm., 2005). The actual amount that the Raley's Landing project applicants would pay toward the program would be determined based on the fee schedule in place as building permits are issued for each building. The fees would be calculated based on the square footage of the various land uses and the number of dwelling units identified in the ultimate submittal to the City. This mitigation measure would be implemented by the city in conjunction with the widening of Sacramento Avenue from Jefferson Boulevard to the I Street Bridge.

With implementation of this mitigation measure, the intersection would operate at an acceptable LOS (LOS C) during the p.m. peak hour under existing plus project conditions. However, because the timing of implementing this mitigation measure is linked to the widening of Sacramento Avenue, the possibility exists that the improvements identified for the Jefferson Boulevard/Sacramento Avenue intersection might not be made before vehicle trips generated by the proposed project contribute to degradation of LOS at the intersection to an unacceptable level. Although this impact would be temporary and ultimately would be reduced to less than significant with implementation of this mitigation measure, this impact is considered **significant and unavoidable**. Table 3.3-22 provides postmitigation LOS calculations for intersections with significant impacts under existing plus project conditions. Exhibit 3.3-10 identifies the existing plus project mitigated intersection lane geometry.

IMPACT 3.3-3 **Transportation and Circulation – Unacceptable LOS Levels on Two Third Street Roadway Segments between E Street and West Capitol Avenue under Existing Plus Project Conditions.** *Traffic added by the project to existing traffic would cause two segments of Third Street between West Capitol Avenue and E Street to exceed daily traffic volume thresholds for residential collector streets. This impact is considered **significant**.*

As shown in Table 3.3-13, the addition of project traffic under the existing plus project condition would result in the segment of Third Street between G Street and West Capitol Avenue (segment S2 in the table) and the segment between F Street and E Street (segment S9 in the table) not meeting LOS standards (i.e., exceeding daily traffic volume thresholds for residential collector streets). Without project traffic, these roadway segments meet LOS standards. Because project traffic degrades the LOS from an acceptable level to an unacceptable level, this impact is considered **significant**.

Mitigation Measure 3.3-3: Provide Improvements along Third Street between E Street and West Capitol Avenue (Existing Plus Project)

Mitigation for this impact would be upgrading Third Street from its current class (residential collector) and configuration (two or three travel lanes) to an arterial street, with four travel lanes (two lanes in each direction) between West Capitol Avenue and G Street, and two travel lanes (one lane in each direction) north of G Street. This improvement would include some access limitations to driveways fronting on Third Street and raised medians to prevent left turns out of the driveways, and other operational improvements to this section of Third Street. Project access points on Third Street shall be limited to the following:

- one driveway on Third Street for the River 1 project area, allowing right turns in and out and left turns in from Third Street southbound;
- one driveway on Third Street for the Washington property, allowing right turns in and out; and
- no driveway access to Third Street for either the River 2 or River 3 areas.

The project applicants shall implement the Third Street fronting improvements on the Washington Street property and in the River 1 area during project construction. The City shall be responsible for restriping Third Street.

With implementation of this mitigation measure, daily traffic volumes on these segments of Third Street would meet City daily volume standards under existing plus project conditions; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.3-4 **Transportation and Circulation – Unacceptable LOS Level on the Fourth Street Roadway Segment between G Street and West Capitol Avenue under Existing Plus Project Conditions.** *Traffic added by the project to existing traffic would cause the segment of Fourth Street between West Capitol and G Street to exceed daily traffic volume thresholds for local residential streets. This impact is considered **significant**.*

As shown in Table 3.3-13, the addition of project traffic under the existing plus project condition would result in the segment of Fourth Street between G Street and West Capitol Avenue (segment S6 in the table) not meeting LOS standards (i.e., exceeding daily traffic volume thresholds for local residential streets). Without project traffic, this roadway segment meets LOS standards. Because project traffic degrades the LOS from an acceptable level to an unacceptable level, this impact is considered **significant**.

Mitigation Measure 3.3-4: Provide Improvements along Fourth Street between G Street and West Capitol Avenue (Existing Plus Project)

This segment of Fourth Street would serve as a primary access roadway to the Washington Street property. The roadway shall be upgraded to a residential collector standard as part of the project. With this design, the roadway would meet daily volume thresholds. The project applicants shall implement this improvement during project construction.

With implementation of this mitigation measure, this segment of Fourth Street would meet the City standard for daily volume thresholds under existing plus project conditions; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.3-5 **Transportation and Circulation – Operation at Below-Standard LOS for Four City of West Sacramento Intersections under Cumulative Plus Project Conditions.** *Traffic added by the proposed project, along with traffic from cumulative development, will cause three currently unsignalized intersections (Third Street/E Street, Third Street/G Street, Fifth Street/G Street) to operate at an unacceptable LOS. An additional unsignalized intersection, Fifth Street/F Street, would operate at an unacceptable LOS without the proposed project, and traffic added by the project would increase average driver delays by more than 5 seconds. This impact is considered* ***significant****.*

As shown in Table 3.3-14, the addition of project traffic under the cumulative plus project condition would result in the Third Street/E Street intersection (Intersection #24 in the table) operating at LOS F during the a.m. and p.m. peak hours. The LOS standard for this unsignalized intersection is LOS D. This intersection would operate at LOS A during both the a.m. and p.m. peak hours under the cumulative no-project condition.

The addition of project traffic under the cumulative plus project condition would result in the Third Street/G Street intersection (Intersection #3 in Table 3.3-14) operating at LOS E during the a.m. peak hour and LOS F during the p.m. peak hour. The LOS standard for this unsignalized intersection is LOS D. This intersection would operate at LOS A during the p.m. peak hour under the cumulative no-project condition.

The addition of project traffic under the cumulative plus project condition would result in the Fifth Street/G Street intersection (Intersection #8 in Table 3.3-14) operating at LOS F during the a.m. and p.m. peak hours. The LOS standard for this unsignalized intersection is LOS C. This intersection would operate at LOS A during both the a.m. and p.m. peak hour under the cumulative no-project condition.

The Fifth Street/F Street intersection (Intersection #7 in Table 3.3-14) would operate at LOS E during the a.m. and p.m. peak hours under the cumulative no-project condition. The LOS standard for this unsignalized intersection is LOS C, and the intersection would operate at an unacceptable LOS without the addition of project traffic. The addition of project traffic under the cumulative plus project condition would result in the Fifth Street/F Street intersection operating at LOS F during the a.m. and p.m. peak hours, and during the a.m. peak-hour (and potentially during the p.m. peak-hour), traffic added by the project would increase average driver delays by more than 5 seconds.

Because traffic generated by the proposed project results in the degradation of LOS at three intersections to unacceptable levels and results in another intersection already operating at an unacceptable LOS to increase average driver delays by more than 5 seconds, this impact is considered **significant**.

Mitigation Measure 3.3-5: Provide Funding for Improvements at Four City of West Sacramento Intersections (Cumulative Plus Project)

Mitigation for this impact would be signalization of the Third Street/E Street, Third Street/G Street, Fifth Street/G Street, and Fifth Street/F Street intersections and restriping of approach lanes as shown in Exhibit 3.3-10.

The Raley's Landing project applicants shall fully fund signalization of the Third Street/E Street intersection and, through a reimbursement agreement with the City, shall receive partial reimbursement from other applicants whose later development contributes traffic to the intersection. Through the reimbursement agreement, these other developers shall pay their fair share of the cost of signalization. Ultimately, the Raley's Landing project applicants shall pay only their fair share of the cost of signalization at this intersection.

As described previously for Mitigation Measure 3.3-1, the improvements at the Third Street/G Street intersection shall be fully funded and implemented as described in the OPA and the Public Facilities Agreement.

In accordance with the Public Facilities Agreement, the project applicants shall contribute $100,000 of the cost of signalizing the Fifth Street/G Street intersection. The remaining cost of signalization shall be funded through the Traffic Impact Fee Program, with the project applicants also paying fees into this program as appropriate. The City shall be responsible for implementing this improvement. This improvement is not currently programmed, although funds are dedicated within the Traffic Impact Fee Program for improvements to various unspecified intersections as needed. The Fifth Street/G Street intersection would fall within this category. The City shall monitor traffic volumes and delays at this location through its regular traffic engineering data collection and shall program the improvement when the signal is warranted.

The Raley's Landing project applicants shall partially fund signalization of the Fifth Street/F Street intersection through payment of fair-share contributions toward the Traffic Impact Fee Program. The City shall be responsible for implementing this improvement. This improvement is not currently programmed, although funds are dedicated within the Traffic Impact Fee Program for improvements to various unspecified intersections as needed. The Fifth Street/F Street intersection would fall within this category. The City shall monitor traffic volumes and delay at this location through its regular traffic engineering data collection and shall program the improvement when the signal is warranted.

Implementation of mitigation at the Third Street/G Street and Fifth Street/F Street intersections would involve payment into the Traffic Impact Fee Program. Because the Traffic Impact Fee Program is being updated and the project includes two development options for the River 1 area (900 residential units or 850 residential units and hotel and conference center), the specific amount of the fee that the project applicants would pay into the Traffic Impact Fee Program is uncertain. If the fees were calculated based on the current fee schedule and based on the land use square footage and the number of dwelling units identified in the current description of the project, the project applicants would contribute approximately $7.3–7.4 million to the City's Traffic Impact Fee Program (Pascoe, pers. comm., 2005). As stated earlier, however, the City is updating its Traffic Impact Fee Program and will be approving a new fee schedule in fall 2005. If the fees were calculated based on the fee schedule currently being considered by the City Council, the project applicants would contribute approximately $8.2–8.3 million to the Traffic Impact Fee Program (Bermudez, pers. comm., 2005). The actual amount that the Raley's Landing project applicants would pay toward the program would be determined based on the fee schedule in place as building permits are issued for each building. The fees would be calculated based on the square footage of the various land uses and the number of dwelling units identified in the ultimate submittal to the City.

With implementation of this mitigation measure, the Third Street/E Street intersection would operate at LOS B during the a.m. and and LOS C during p.m. peak hours. The Third Street/G Street intersection would operate at LOS B during the a.m. peak and LOS C during the p.m. peak hour. The Fifth Street/G Street intersection would operate at LOS A during the a.m. and p.m. peak hours, and the Fifth Street/F Street intersection would operate at LOS A during the a.m. and p.m. peak hours. Therefore, this impact would be reduced to **less than significant** for the cumulative plus project condition. Table 3.3-23 provides postmitigation LOS calculations for intersections with significant impacts under cumulative plus project conditions.

IMPACT 3.3-6 **Transportation and Circulation – Operation at Below-Standard LOS at the Third Street/Tower Bridge Gateway Intersection under Cumulative Plus Project Conditions.** *The Third Street/Tower Bridge Gateway intersection would operate at an unacceptable LOS under cumulative conditions, without the addition of traffic from the proposed project. Traffic generated by the proposed project would add greater than 0.05 to the V/C ratio at this signalized intersection. This impact is considered* ***significant****.*

The Third Street/Tower Bridge Gateway intersection (Intersection #5 in Table 3.3-14) would operate at LOS E during the a.m. peak hour and at LOS F during the p.m. peak hour under the cumulative no-project condition. The LOS standard for this signalized intersection is LOS D, and the intersection would operate at an unacceptable LOS without the addition of project traffic. The addition of project traffic under the cumulative plus project condition would result in the Third Street/Tower Bridge Gateway intersection operating at LOS F during the a.m. and p.m. peak hours and would add greater than 0.05 to the V/C ratio at this signalized intersection. During both peak-hour periods (during a.m. peak hour, V/C ratio increases from 0.99 to 1.06, and during the p.m. peak hour, the V/C ratio increases from 1.05 to 1.16 [Table 3.3-14]).

Because traffic generated by the proposed project would result in a signalized intersection already operating at an unacceptable LOS under the cumulative no-project condition to increase the V/C ratio by more than 0.05, this impact is considered **significant**.

Mitigation Measure 3.3-6: Reduce Vehicle Trip Generation from the Proposed Project (Cumulative Plus Project)

The Third Street/Tower Bridge Gateway intersection is included as part of the City's planned conversion of Tower Bridge Gateway from its current classification as a freeway with no at-grade intersections, to an arterial street, with three at-grade intersections. The Third Street/Tower Bridge Gateway intersection configuration and infrastructure included in the City's planned Tower Bridge Gateway conversion are the same intersection characteristics used in this analysis. There are no opportunities for further improvements to this intersection because of site constraints and other factors. Therefore, the only opportunity for the proposed Raley's Landing project to mitigate this impact is to reduce the number of trips generated by the project and, consequently, minimize the number of trips contributed to this intersection. This would be achieved by both minor and major office tenants as defined in the City's Transportation Systems Management (TSM) provision (Chapter 17.67). The Transportation Management Plan (TMP) shall achieve the following objectives:

- Increase public awareness and use of transportation alternatives to the single-occupant vehicle.
- Maximize and promote alternative commute modes.
- Reduce the total number of single-occupant vehicle trips associated with home-to-work and work-to-home commuting, which will result in a reduction of traffic congestion and vehicle emissions.
- Reduce present and future motor vehicle emissions as a contribution toward complying with federal and state ambient air quality standards.
- Achieve an average vehicle ridership of 1.5 persons per motor vehicle at all work sites with 100 or more employees.

These objectives can be achieved and are described in detail in the TSM advisory handbook required for both minor and major employers. Discretion shall be granted to select from among a range of TSM measures. The TMP shall include a reasonable combination of implementation measures designed to achieve the goals of this chapter. TSM measures include, but are not limited to, the following:

A. parking facilities: preferential parking for carpools and vanpools, perimeter or park-and-ride lots with shuttle service, restricted parking for single-occupancy vehicles;

B. bicycle facilities: secured bicycle parking facilities, class I bicycle lockers, class II bicycle racks, showers and lockers;

C. services: on-site sale of transit passes, shuttle services, carpool/vanpool matching services, informational and promotional programs, guaranteed ride-home program;

D. subsidies: subsidies for transit passes/tickets, parking subsidies, vanpool subsidies;

E. special incentives: creative incentive programs, disincentives, schedules (flextime, alternative work shifts), telecommuting; and

F. other: membership in the transportation management association, employee travel allowance, reduced-emission vehicles, on-site child care facilities.

Additionally, pedestrian access to and from the project areas shall be designed to maximize the convenience and comfort of project residents, employees, and visitors who walk to, from, or within the project. Internal pedestrian connections within project areas shall be provided to minimize extra walking distance within the project areas. Sidewalks shall be installed on all project fronting streets and on internal project streets. Pedestrian connections from the River 1, 2, and 3 areas and River Walk Park shall be provided. A pedestrian connection shall be provided from River 1 to Tower Bridge Gateway and the planned pedestrian walkways on Tower Bridge.

Although these mitigation measures collectively may reduce the vehicle trip generation for the project, concluding that the decrease would eliminate the impact at this intersection would be speculative; therefore, the addition of project traffic after mitigation could result in a greater than a 0.05 increase in the V/C ratio at the Third Street/Tower Bridge Gateway intersection. This impact would be **significant and unavoidable**.

IMPACT 3.3-7 **Transportation and Circulation – Unacceptable LOS on Two Third Street Roadway Segments between E Street and Tower Bridge Gateway under Cumulative Plus Project Conditions.** *Traffic added by the proposed project along with traffic from cumulative development would cause two segments of Third Street between E Street and Tower Bridge Gateway to exceed daily traffic volume thresholds for residential collector streets. This impact is considered **significant**.*

As shown in Table 3.3-15, the addition of project traffic under the cumulative plus project condition would result in the segment of Third Street between E Street and F Street (segment S9 in the table) not meeting LOS standards (i.e., exceeding daily traffic volume thresholds for residential collector streets). Without project traffic, this roadway segment would meet LOS standards. The segment of Third Street between G Street and Tower Bridge Gateway (Segment S2 in Table 3.3-15) would operate at an unacceptable LOS under the cumulative no-project condition. Traffic added by the proposed project would constitute a greater than 25% increase in daily traffic volumes (3,320 average daily traffic [ADT] per lane for cumulative no-project; 6,560 ADT per lane for cumulative plus project). Because project traffic degrades the LOS from an acceptable level to an unacceptable level for one Third Street segment and would result in a greater than 25% increase in daily traffic volumes in another segment that would already be operating at an unacceptable LOS, this impact is considered **significant**.

Mitigation Measure 3.3-7: Provide Improvements along Third Street between E Street and Tower Bridge Gateway (Cumulative Plus Project)

Implement Mitigation Measure 3.3-3.

With implementation of this mitigation measure, daily traffic volumes on these segments of Third Street would meet City LOS standards under cumulative plus project conditions; therefore, this impact would be reduced to **less than significant.**

IMPACT 3.3-8 **Transportation and Circulation – Contribution of Traffic to State Highway Facilities Operating at an Unacceptable LOS under Cumulative Plus Project Conditions.** *Traffic generated by cumulative development alone, without implementation of the proposed project, would cause weaving sections of I-5 and U.S. 50 to operate at an unacceptable LOS. Traffic added by the proposed project would exacerbate the unacceptable LOS at these locations. This impact is considered* ***significant****.*

As shown in Table 3.3-17, all five state highway weaving segments included in the traffic study area would operate at an unacceptable LOS under the cumulative no-project condition:

- The weaving section on U.S. 50 westbound between I-5 and South River Road would operate at LOS F during the a.m. and p.m. peak hours.
- The weaving section on U.S. 50 eastbound between South River Road and I-5 would operate at LOS F during the a.m. and p.m. peak hours.
- The weaving section on I-5 southbound from the P Street on-ramp would operate at LOS F during the p.m. peak hour.
- The weaving section on I-5 northbound between the P Street on-ramps and the J Street off-ramps would operate at LOS F during the a.m. and p.m. peak hours.
- The weaving section on I-5 southbound between the J Street on-ramps and the Q Street off-ramps would operate at LOS F during the p.m. peak hour.

Although the addition of project traffic would not alter any of the LOS conditions on state highway facilities, traffic added by the proposed project would exacerbate the unacceptable LOS conditions at the locations listed above. This impact is considered **significant**.

Mitigation Measure 3.3-8: Provide Fair-Share Funding for Interchange Improvements Included in the City's Traffic Impact Fee Program, and Reduce Vehicle Trip Generation from the Proposed Project (Cumulative Plus Project)

The City has developed improvement plans for the Jefferson Boulevard/U.S. 50 interchange, and the South River Road/U.S. 50 interchange (City of West Sacramento 1993). The City has included the cost of this improvement in its Traffic Impact Fee Program and through payment of the traffic impact fees, the project applicants would provide fair-share funding for these improvements. Because the Traffic Impact Fee Program is being updated and the project includes two development options for the River 1 area (900 residential units or 850 residential units and hotel and conference center), the specific amount of the fee that the project applicants would pay into the Traffic Impact Fee Program is uncertain. If the fees were calculated based on the current fee schedule and based on the land use square footage and the number of dwelling units identified in the current description of the project, the project applicants would contribute approximately $7.3–7.4 million to the City's Traffic Impact Fee Program (Pascoe, pers. comm., 2005). As stated earlier, however, the City is updating its Traffic Impact Fee Program and will be approving a new fee schedule in fall 2005. If the fees were calculated based on the fee schedule currently being considered by the City Council, the project applicants would contribute approximately $8.2–8.3 million to the Traffic Impact Fee Program (Bermudez, pers. comm., 2005). The actual amount that the Raley's Landing project applicants would pay toward the program would be determined based on the fee schedule in place as building permits are issued for each building. The fees would be calculated based on the square footage of the various land uses and the number of dwelling units identified in the ultimate submittal to the City. Implementation of these interchange projects would assist in improving traffic conditions on U.S. 50. The City, in conjunction with Caltrans, would be responsible for implementing this mitigation measure. The improvement is not currently programmed.

The remaining freeway segments where a significant impact was identified are all along a portion of I-5 that passes through the city of Sacramento and are outside the jurisdiction of the City of West Sacramento. In addition, all five highway segments in question are state highway facilities, and Caltrans is ultimately responsible for implementing improvements on such facilities. There is no mechanism for the project applicants to contribute funding to freeway improvements not included in the City of West Sacramento Traffic Impact Fee Program. Therefore, the only opportunity for the proposed Raley's Landing project to further mitigate this impact is to reduce the number of trips generated by the project and, consequently, minimize the number of trips contributed to state highway facilities. Implementation of Mitigation Measure 3.3-6, described above, would result in a decrease in the amount of vehicle traffic generated by the proposed project and could reduce the impact of the project on state highway facilities. However, these measures would not eliminate the project's contribution to unacceptable LOS conditions at the weaving sections in question. Therefore, this impact is considered **significant and unavoidable**.

IMPACT 3.3-9 **Transportation and Circulation – Unacceptable LOS on the City of Sacramento Third Street/J Street Intersection under Existing Plus Project Conditions.** *Traffic generated by cumulative development alone, without implementation of the proposed project, would cause the Third Street/J Street intersection in the City of Sacramento to operate at an unacceptable LOS. Traffic added by the proposed project would increase the peak period average vehicle delay by more than 5 seconds. This impact is considered **significant**.*

As shown in Table 3.3-18, the Third Street/J Street intersection in the city of Sacramento (intersection #19 in the table) would operate at an unacceptable LOS (LOS D during the a.m. peak hour) under the cumulative no-project condition. Based on the traffic modeling results, vehicle trips added by the proposed project would increase the peak average vehicle delay during the a.m. peak hour by 5.7 seconds. Because traffic added by the proposed project would increase the peak period average vehicle delay by more than 5 seconds at an intersection already operating at an unacceptable LOS, this impact is considered **significant**.

Mitigation Measures

No mitigation is available.

There is no mechanism for projects in the city of West Sacramento that may cause significant traffic impacts in the city of Sacramento to provide funding or otherwise contribute to traffic network improvements to mitigate these impacts. The same is true for projects in Sacramento that may result in significant traffic impacts in West Sacramento. At this time, the cities have mechanisms to accept traffic mitigation only from projects in their own jurisdiction. Therefore, no measures are available for the Raley's Landing project to mitigate significant traffic impacts it may contribute to in the city of Sacramento. Therefore, Impact 3.3-10 would be **significant and unavoidable**.

IMPACT 3.3-10 **Transportation and Circulation – Operation at Below-Standard LOS for Four City of Sacramento Intersections under Cumulative Plus Project Conditions.** *Four study intersections in the city of Sacramento (Third Street/Capitol Mall, Third Street/J Street, Third Street/P Street, I Street/Jibboom Street) would operate at an unacceptable LOS under cumulative conditions without the proposed project. Traffic added by the project would result in additional peak-hour periods (a.m. peak or p.m. peak) experiencing unacceptable LOS at these intersections and increases in the peak period average vehicle delays of more than 5 seconds. This impact is considered **significant**.*

As shown in Table 3.3-19, four intersections in the city of Sacramento would operate at an unacceptable LOS under the cumulative no-project condition. These intersections would experience an additional degradation of LOS with the addition of project traffic. Conditions for each intersection are described below.

The Third Street/Capitol Mall intersection (Intersection #18 in Table 3.3-19) would operate at LOS D during the a.m. peak hour and LOS C during the p.m. peak hour under the cumulative no-project condition. The LOS standard for this intersection is LOS C, and the intersection would operate at an unacceptable LOS during the a.m. peak hour without the addition of project traffic. The addition of project traffic under the cumulative plus project condition would result in the Third Street/Capitol Mall intersection operating at LOS E during the a.m. peak hour and LOS D during the p.m. peak hour. During both the a.m. and p.m. peak hour, traffic added by the project would increase peak period average vehicle delays by more than 5 seconds.

The Third Street/J Street intersection (Intersection #19 in Table 3.3-19) would operate at LOS E during the a.m. peak hour under the cumulative no-project condition. The LOS standard for this intersection is LOS C, and the intersection would operate at an unacceptable LOS without the addition of project traffic. The addition of project traffic under the cumulative plus project condition would result in the Third Street/J Street intersection operating at LOS F during the a.m. peak hour. During the a.m. peak hour, traffic added by the project would increase peak period average vehicle delays by more than 5 seconds.

The Third Street/P Street intersection (Intersection #20 in Table 3.3-19) would operate at LOS D during the p.m. peak hour under the cumulative no-project condition. The LOS standard for this intersection is LOS C, and the intersection would operate at an unacceptable LOS without the addition of project traffic. The addition of project traffic under the cumulative plus project condition would result in the Third Street/P Street intersection operating at LOS E during the p.m. peak hour. During the p.m. peak hour traffic, added by the project would increase peak period average vehicle delays by more than 5 seconds.

The I Street/Jibboom Street intersection (Intersection #22 in Table 3.3-19) would operate at LOS C during the a.m. peak hour and LOS D during the p.m. peak hour under the cumulative no-project condition. The LOS standard for this intersection is LOS C, and the intersection would operate at an unacceptable LOS during the p.m. peak hour without the addition of project traffic. The addition of project traffic under the cumulative plus project condition would result in the I Street/Jibboom Street intersection operating at LOS E during the a.m. and p.m. peak hours. During both the a.m. and p.m. peak hour traffic, added by the project would increase peak period average vehicle delays by more than 5 seconds.

Traffic generated by the proposed project would result in the degradation of LOS at two of these intersections to unacceptable levels (Third Street/Capitol Mall p.m. peak, I Street/Jibboom Street a.m. peak). In addition, at all four intersections, traffic generated by the proposed project would increase peak period average vehicle delays by more than 5 seconds during periods when they already operate at an unacceptable LOS. Therefore, this impact is considered **significant**.

Mitigation Measures

No mitigation is available.

As discussed previously, there is no mechanism for projects in the city of West Sacramento that may cause significant traffic impacts in the city of Sacramento to provide funding or otherwise contribute to traffic network improvements to mitigate these impacts. The same is true for projects in Sacramento that may result in significant traffic impacts in West Sacramento. At this time, both cities have mechanisms to accept traffic mitigation only from projects in their own jurisdiction. Therefore, no measures are available for the Raley's Landing project to mitigate significant traffic impacts it may contribute to in the city of Sacramento.

Table 3.3-1
Level of Service Definitions

LOS A	Represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.
LOS B	This level of service is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.
LOS C	This level of service is in the range of stable flow, but marks the beginning of the range of flow in which the operations of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.
LOS D	Represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
LOS E	Represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.
LOS F	This level of service is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level of service F is used to describe the operating conditions within the queue, as well as the point of the breakdown.

Source: Transportation Research Board 1985

Table 3.3-2
Peak-Hour LOS: City of West Sacramento Study Intersections, Existing (2005)

Intersection		A.M.		P.M.	
		LOS Criterion[1]	LOS	LOS Criterion[1]	LOS
1	Third Street/C Street (Signalized)	0.35	A	0.41	A
24	Third Street/E Street (Unsignalized)[2]	0.8	A	1.0	A
	Eastbound E Street	*9.2*	*A*	*10.6*	*A*
	Westbound E Street	*9.8*	*B*	*9.8*	*B*
2	Third Street/F Street (Signalized)	0.10	A	0.16	A
3	Third Street/G Street (Unsignalized)[2]	1.3	A	4.7	A
	Eastbound G Street	*10.0*	*A*	*9.4*	*A*
	Westbound G Street	*10.3*	*B*	*11.1*	*B*
4	Third Street/West Capitol Avenue (Signalized)	0.32	A	0.38	A
5	Third Street/Tower Bridge Gateway (Future)	NA	NA	NA	NA
6	Fifth Street/C Street (Signalized)	0.28	A	0.34	A
7	Fifth Street/F Street (Unsignalized)[2]	2.2	A	2.4	A
	Eastbound F Street	*10.5*	*B*	*10.9*	*B*
	Westbound F Street	*10.1*	*B*	*11.5*	*B*
8	Fifth Street/G Street (Unsignalized)[2]	0.40	A	0.50	A
	Eastbound G Street	*9.7*	*A*	*9.7*	*A*
	Westbound G Street	*9.7*	*A*	*10.5*	*B*
9	Fifth Street/West Capitol Avenue (Unsignalized)[3]	0.19	A	0.36	B
10	Fifth Street/Tower Bridge Gateway (Future)	NA	NA	NA	NA
11	Jefferson Boulevard/West Capitol Avenue (Signalized)	0.53	A	0.71	C
12	Jefferson Boulevard/Sacramento Avenue (Signalized)	0.62	B	0.73	C
13	Riske Lane/West Capitol Avenue (Unsignalized)	2.50	A	3.00	A
	Northbound Riske Lane	*10.5*	*B*	*15.5*	*C*
	Southbound (driveway)	*8.7*	*A*	*9.2*	*A*
14	South River Road/U.S. 50 WB Off-Ramp (Signalized)	0.41	A	0.36	A
15	South River Road/U.S. 50 EB On-Ramp (Unsignalized)	2.90	A	1.70	A
	Eastbound	*0.0*	*0.0*	*8.9*	*A*
	Westbound	*16.4*	*C*	*7.4*	*A*
16	Garden Street/Tower Bridge Gateway (Future)	NA	NA	NA	NA

[1] For signalized intersections, the LOS criterion variable is volume-to-capacity ration (V/C); for unsignalized intersections, the LOS criterion variable is average driver delay, in seconds.

[2] Minor street stop only; major street does not stop. Top row for minor street stop intersections is average driver delay for the entire intersection, on which LOS evaluations are based. Lower rows, in italics, provide driver delay and LOS for side street approaches.

[3] All-way-stop intersection.

Source: DKS Associates 2005

Table 3.3-3
Daily Volume Thresholds and LOS by Roadway Type

Roadway Type	Average Daily Traffic Volume/Lane				
	A	B	C	D	E
Residential local street	300	600	1,000	1,500	2,250
Residential collector (no access control)	800	1,600	2,400	3,200	4,000
Residential collector (w/access control)	3,000	3,500	4,000	4,500	5,000
Arterial, low access control	4,500	5,250	6,000	6,750	7,500
Arterial, moderate access control	5,400	6,300	7,200	8,100	9,000
Arterial, high access control	6,000	7,000	8,000	9,000	10,000
Rural highway (other)	1,200	2,400	3,950	6,750	11,450
Rural highway (24–36 feet paved, with shoulder)	1,100	2,150	3,550	6,100	10,000
Rural highway (24–36 feet paved, no shoulder)	900	1,800	2,950	5,050	8,500

Source: DKS Associates 2005, adapted from City of West Sacramento 2005

Table 3.3-4
Roadway Daily Volume Threshold Analysis, Existing (2005)

Analysis Segment				Number of Lanes	ADT[1]	ADT/ Lane	LOS
#	Roadway	Location	Roadway Class				
S1	F Street	West of Eighth Street	Residential collector (no access control)	2	1,479	740	A
S2	Third Street	Between G Street and West Capitol Avenue	Residential collector (no access control)	3	4,316	1,439	B
S3	Fourth Street	Between F and E Streets	Residential local street	2	115	58	A
S4	Fifth Street	Between F and E Streets	Arterial (low access control)	4	5,144	1,286	A
S5	Fifth Street	Between G Street and West Capitol Avenue	Arterial (low access control)	4	6,051	1,513	A
S6	Fourth Street	Between G Street and West Capitol Avenue	Residential local street	2	145	73	A
S7	F Street	Between Fifth and Sixth Streets	Residential collector (no access control)	2	1,367	684	A
S8	West Capitol Avenue	West of Fifth Street	Arterial, low access control	2	6,295	3,148	A
S9	Third Street	Between F and E Streets	Residential collector (no access control)	2	2,621	1,311	B
S10	G Street	Between Fifth and Sixth Streets	Residential local street	2	198	99	A
S11	Tower Bridge Gateway	Between Third and Fifth Streets	Arterial, high access control	4	10,900 [2]	2,725	A

[1] Traffic counts for all roadway segments except segment S11 were taken in April 2005.
[2] Source: Caltrans 2004.
Source: DKS Associates 2005

Table 3.3-5 Operations on State Highway Facilities, Existing (2005)						
Facility/Analysis Type[1,2]	Segment	MOE[4]	A.M.		P.M.	
			Calc.	LOS	Calc.	LOS
Major Merge or Diverge						
U.S. 50 westbound[3]	SR 275 on-ramp	V/C[5]	0.67	C	0.73	C
U.S. 50 eastbound	SR 275 off-ramp	V/C	0.22	C	0.16	C
Weaving Section						
U.S. 50 westbound	I-5 to South River Road	Density[6]	32.7	D	33.8	D
U.S. 50 eastbound [3]	South River Road to I-5	Density	36.7	E	41.7	E
I-5 southbound	to P Street on-ramp	Density	14.4	B	23.7	C
I-5 northbound	P Street to J Street	Density	33.9	D	35.6	E
I-5 southbound[3]	J Street to Q Street	Density	27.2	C	38.2	E
Diverge–Auxiliary Lane						
I-5 southbound	Richards off-ramp	V/C	0.35	C	0.30	C

1 Based on methods defined in Transportation Research Board 2000.
2 All calculations based on counts or volumes provided by Caltrans or from ramp intersection turning movement counts by DKS Associates, except where noted.
3 No count or volume available. Peak volumes estimated by DKS Associates.
4 MOE = measure of effectiveness.
5 V/C = volume-to-capacity ratio.
6 Density = vehicle per mile.
Source: DKS Associates 2005

Table 3.3-6 Peak-Hour LOS: City of Sacramento Study Intersections, Existing (2005)					
Intersection		A.M.		P.M.	
		Average Delay (Seconds)	LOS	Average Delay (Seconds)	LOS
17	Front Street/Capitol Mall	2.6	A	5.4	A
18	Third Street/Capitol Mall	18.8	B	20.7	C
19	Third Street/J Street	38.0	D	27.6	C
20	Third Street/P Street	9.8	A	15.4	B
21	Third Street/Q Street	11.6	B	16.6	B
22	I Street/Jibboom Street	21.5	C	24.5	C
23	Third Street/L Street	12.6	B	17.0	B

Source: DKS Associates 2005, based on traffic counts taken in April 2005.

Table 3.3-7
Project Vehicle Trip Generation Rates and Formulas

Land Use	ITE Code	Trip Generation Variable	Formula or Rate
Multi-Family	220	Number of Residents	A.M. Trips = 0.26 x Residents + 10.99
		Note: Assumes 2.2 Residents per Dwelling	P.M. Trips = 0.39 x Residents + 2.03
			Daily Trips = 3.43 x Residents - 30.02
Mixed Retail/Commercial	Blended Rate[1]		
Shopping Center	820	KSF (Sq.ft. Building Area / 1,000)	A.M. Trips = exp (0.60 x ln(KSF) + 2.29)
			P.M. Trips = exp (0.66 x ln(KSF) + 3.40)
			Daily Trips = exp (0.65 x ln(KSF) + 5.83)
Specialty Retail	814	KSF (Sq.ft. Building Area / 1,000)	A.M. Trips = 4.91 x KSF + 115.59
			P.M. Trips = 2.40 x KSF + 21.48
			Daily Trips = 42.78 x KSF + 37.66
General Office	710	KSF (Sq.ft. Building Area / 1,000)	A.M. Trips = exp (0.80 x ln(KSF) + 1.55)
			P.M. Trips = 1.12 x KSF + 78.81
			Daily Trips = exp (0.77 x ln(KSF) + 3.65)
Hotel	310	Rooms	A.M. Trips = 0.56 x Rooms
			P.M. Trips = 0.58 x Rooms
			Daily Trips = 7.40 x Rooms

[1] Blended rate combines use 820 and 814, and applied to project commercial/retail uses.
Source: DKS Associates 2005 based on ITE 2003.

Table 3.3-8
Project Vehicle Trip Generation (Unadjusted ITE Trip Calculations)

Project Subarea / Land Use	Units	Quantity	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Washington Street Property									
Multi-Family	Residents[1]	1,210	65	260	326	308	166	474	4,120
Mixed Commercial/Retail	KSF	40	97	105	201	129	101	230	2,746
Washington Subtotal			162	365	527	437	267	704	6,866
River 1 Area									
Apartments	Residents[1]	330	19	77	97	85	46	131	1,102
Mixed Commercial/Retail	KSF	42	100	108	207	99	78	177	2,849
General Office	KSF	245	338	46	384	60	293	353	2,660
Hotel Rooms	Rooms	300	33	133	167	113	61	174	2,221
River 1 Subtotal			490	365	855	357	478	835	8,832
River 2 Area									
Apartments	Residents[1]	330	19	77	97	85	46	131	1,102
River 2 Subtotal		330	19	77	97	85	46	131	1,102
River 3 Area									
General Office	KSF	600	692	94	786	128	623	751	5,301
Mixed Commercial/Retail	KSF	20	66	71	137	80	63	143	1,639
River 3 Subtotal			758	165	923	208	686	894	6,940
Project Total			1,429	973	2,402	1,087	1,476	2,563	23,741

[1] Assumes 2.2 persons per dwelling: Washington Street property = 1,210 / 2.2 = 550 dwellings; River 1 and 2 areas = 330 / 2.2 = 150 dwellings each.

Source: DKS Associates 2005

Table 3.3-9
Project Trip Generation Adjustments

Residential Vehicle Trip Adjustment Factor	
Average (ITE) Residential Vehicle Trip %	94.8%
Raley's Residential Vehicle Trip %	81.9%
Raley's Residential Vehicle Trip Reduction Factor	0.86
Nonresidential Vehicle Trip Adjustment Factor	
Average (ITE) Nonresidential Vehicle Trip %	95.5%
Raley's Nonresidential Vehicle Trip %	89.2%
Raley's Nonresidential Vehicle Trip Reduction	0.93
Internalization of Trips Adjustments	0.85
Total Nonresidential Vehicle Trip Reduction Factor	0.79

Source: DKS Associates 2005, based on City of West Sacramento travel demand model output.

Table 3.3-10
Project Vehicle Trip Generation--Adjusted

Project Subarea / Land Use	Units	Quantity	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	Total	Daily
Washington Street Property									
Multi-Family	Residents[1]	1,210	56	225	281	266	143	409	3,553
Mixed Commercial/Retail	KSF	40	77	83	160	102	80	182	2,179
Washington Subtotal			133	308	441	368	223	591	5,732
River 1 Area									
Apartments	Residents[1]	330	17	67	83	73	39	113	950
Mixed Commercial/Retail	KSF	42	79	86	165	78	62	140	2,261
General Office	KSF	245	268	37	305	48	233	280	2,111
Hotel Rooms	Rooms	300	26	106	132	90	48	138	1,763
River 1 Area Subtotal			390	296	685	289	382	671	7,085
River 2 Area									
Apartments	Residents[1]	330	17	67	83	73	39	113	950
River 2 Area Subtotal			17	67	83	73	39	113	950
River 3 Area									
General Office	KSF	600	549	75	624	101	495	596	4,207
Mixed Commercial/Retail	KSF	20	52	56	108	64	50	113	1,301
River 3 Area Subtotal			601	131	732	165	545	709	5,508
Project Total Trips			1,141	802	1,941	895	1,189	2,084	19,275
Project Total Reductions			-288	-171	-461	-192	-287	-479	-4,466
% Reductions			-20%	-18%	-19%	-18%	-19%	-19%	-19%

Source: DKS Associates 2005

Table 3.3-11
Project Trip Distribution

	Trip Purpose		
	Commute (%)	All Other Purposes (%)	All Trips (%)
Trips from Project Residential Uses to…			
…Within Project Area	16.6	9.8	10.3
…Triangle Area	19.1	20.1	20.0
…West Sacramento, North of Channel	18.6	25.0	24.5
…West Sacramento, South of Channel	2.6	3.5	3.4
…Downtown Sacramento	23.5	20.6	20.8
…Rest of Sacramento County	16.6	17.8	17.7
…Rest of Yolo County	1.8	2.2	2.2
…Rest of Region	1.1	1.1	1.1
Totals	100.0	100.0	100.0
Trips to Project Employment Uses from…			
…Within Project Area	2.7	8.8	6.9
…Triangle Area	4.2	15.2	11.9
…West Sacramento, North of Channel	11.5	23.7	20.1
…West Sacramento, South of Channel	7.6	4.6	5.5
…Downtown Sacramento	5.4	21.4	16.6
…Rest of Sacramento County	51.7	23.2	31.7
…Rest of Yolo County	6.4	1.2	2.7
…Rest of Region	10.5	2.0	4.5
Totals	100.0	100.0	100.0

Source: DKS Associates 2005, based on output of the City of West Sacramento travel demand model.

Table 3.3-12
Peak-Hour LOS: City of West Sacramento Study Intersections, Existing and Existing Plus Project

Intersection		LOS Standard[1]	Existing				Existing Plus Project (No Mitigation)			
			AM		PM		AM		PM	
			LOS Criterion[2]	LOS	LOS Criterion[2]	LOS	LOS Criterion[2]	LOS	LOS Criterion[2]	LOS
1	Third Street/C Street (Signal)	D	0.35	A	0.41	A	0.59	A	0.64	B
24	Third Street/E Street (Stop Sign)[3]	D	0.8	A	4.7	A	5.4	A	11.9	B
	Eastbound E Street		*9.2*	*A*	*9.4*	*A*	*21.1*	*C*	*14.4*	*B*
	Westbound E Street		*9.8*	*B*	*11.1*	*B*	*20.1*	*D*	*33.9*	*D*
2	Third Street/F Street (Signal)	D	0.10	A	0.16	A	0.45	A	0.42	A
3	Third Street/G Street (Stop Sign)[3]	D	1.3	A	4.7	A	2.2	A	**>50.0**	**F**
	Eastbound G Street		*10.0*	*A*	*9.4*	*A*	*19.8*	*C*	*25.1*	*D*
	Westbound G Street		*10.3*	*B*	*11.1*	*B*	*32.3*	*D*	*>50.0*	*F*
4	Third Street/West Capitol Avenue (Signal)	D	0.32	A	0.38	A	0.52	A	0.58	A
5	Third Street/Tower Bridge Gateway (Future)	D	NA	NA	NA	NA	NA	NA	NA	NA
6	Fifth Street/C Street (Signal)	D	0.28	A	0.34	A	0.38	A	0.39	A
7	Fifth Street/F Street (Stop Sign)[3]	C	2.2	A	2.4	A	3.6	A	3.9	A
	Eastbound F Street		*10.5*	*B*	*10.9*	*B*	*11.9*	*B*	*12.7*	*B*
	Westbound F Street		*10.1*	*B*	*11.5*	*B*	*11.6*	*B*	*14.1*	*B*
8	Fifth Street/G Street (Stop Sign)[3]	C	0.40	A	0.50	A	3.0	A	4.0	A
	Eastbound G Street		*9.7*	*A*	*9.7*	*A*	*10.5*	*B*	*10.2*	*B*
	Westbound G Street		*9.7*	*A*	*10.5*	*B*	*11.4*	*B*	*16.5*	*C*
9	Fifth Street/West Capitol Avenue (Stop Sign) [4]	D	0.19	A	0.36	B	0.34	B	0.70	C
10	Fifth Street/Tower Bridge Gateway (Future)	D	NA	NA	NA	NA	NA	NA	NA	NA
11	Jefferson Boulevard/ West Capitol Avenue (Signal)	D	0.53	A	0.71	C	0.54	A	0.71	C
12	Jefferson Boulevard/ Sacramento Avenue (Signal)	C	0.62	B	0.73	C	0.73	C	**0.81**	**D**
13	Riske Lane/West Capitol Avenue (Stop Sign)	D	2.50	A	3.00	A	2.70	A	4.90	A
	Northbound Riske Lane		*10.5*	*B*	*15.5*	*C*	*11.4*	*B*	*21.8*	*C*
	Southbound (driveway)		*8.7*	*A*	*9.2*	*A*	*0.0*	*0.0*	*9.3*	*A*

Table 3.3-12 (continued)
Peak-Hour LOS: City of West Sacramento Study Intersections, Existing and Existing Plus Project

	Intersection	LOS Standard[1]	Existing				Existing Plus Project (No Mitigation)			
			AM		PM		AM		PM	
			LOS Criterion[2]	LOS	LOS Criterion[2]	LOS	LOS Criterion[1]	LOS	LOS Criterion[2]	LOS
14	South River Road/U.S. 50 WB Off-ramp (Signal)	D	0.41	A	0.36	A	0.41	A	0.40	A
15	South River Road/U.S. 50 EB On-ramp (Stop Sign)[3]	D	2.90	A	1.70	A	2.70	A	4.10	A
	Eastbound		*0.0*	*0.0*	*8.9*	*A*	*0.0*	*0.0*	*10.5*	*B*
	Westbound		*16.4*	*C*	*7.4*	*A*	*17.1*	*C*	*7.4*	*A*
16	Garden Street/Tower Bridge Gateway (Future)	D	NA	NA	NA	NA	NA	NA	NA	NA

Bolding and underlining indicates intersection does not meet City LOS standard.

1 LOS standard is C or better, unless intersection is within one-quarter mile of a freeway interchange or bridge crossing of the Sacramento River or Deep Water Ship Channel where LOS D is acceptable.

2 For signalized intersections, the LOS criterion variable is volume-to-capacity ratio (V/C); for unsignalized intersections, the LOS criterion variable is average driver delay, in seconds.

3 Minor street stop only; major street does not stop. Top row for minor street stop intersections is average driver delay for the entire intersection, on which LOS evaluations are based. Lower rows, in italics, provide driver delay and LOS for side street approaches.

4 All-way stop intersection.

Source: DKS Associates 2005

Table 3.3-13
Roadway Daily Volume Threshold Analysis, Existing and Existing Plus Project

Analysis Segment			LOS Standard	Threshold Volume (ADT/Lane)1	Existing				Existing Plus Project		
#	Segment	Location			Roadway Class	Lanes	ADT/ Lane	Meet LOS Standard?	Lanes	ADT/ Lane	Meet LOS Standard?
S1	F Street	West of Eighth Street	C	2,400	Residential Collector	2	740	Yes	2	940	Yes
S2	Third Street	Between G and West Capitol Avenue	D	3,200	Residential Collector	3	1,439	Yes	3	3,970	**<u>No</u>**
S3	Fourth Street	Between F and E Streets	D	1,500	Residential Local	2	58	Yes	2	330	Yes
S4	Fifth Street	Between F and E Streets	D	6,750	Arterial Low	4	1,286	Yes	4	1,900	Yes
S5	Fifth Street	Between G and West Capitol Avenue	D	6,750	Arterial Low	4	1,513	Yes	4	1,970	Yes
S6	Fourth Street	Between G and West Capitol Avenue	D	1,500	Residential Local	2	73	Yes	2	1,840	**<u>No</u>**

Table 3.3-13 (continued)
Roadway Daily Volume Threshold Analysis, Existing and Existing Plus Project

Analysis Segment			LOS Standard	Threshold Volume (ADT/Lane)1	Existing				Existing Plus Project		
#	Segment	Location			Roadway Class	Lanes	ADT/ Lane	Meet LOS Standard?	Lanes	ADT/ Lane	Meet LOS Standard?
S7	F Street	Between Fifth and Sixth Streets	C	2,400	Residential Collector	2	684	Yes	2	880	Yes
S8	West Capitol Avenue	West of Fifth Street	C	6,000	Arterial Low	2	3,148	Yes	2	4,000	Yes
S9	Third Street	Between F and E Streets	D	3,200	Residential Collector	2	1,311	Yes	2	4,140	**<u>No</u>**
S10	G Street	Between Fifth and Sixth Streets	C	1,000	Residential Local	2	99	Yes	2	110	Yes
S11	SR 275	Between Third and Fifth Streets	D	9,000	Arterial High	4	2,725	Yes	4	3,720	Yes

<u>Bolding and underlining</u> indicates segment volume greater than suggested threshold volume.

[1] Adapted by DKS Associates from City of West Sacramento 2005.

Source: DKS Associates 2005

Table 3.3-14
Peak-Hour LOS: City of West Sacramento Study Intersections, Cumulative No Project and Cumulative Plus Project

	Intersection	LOS Standard[1]	Cumulative No Project				Cumulative Plus Project (No Mitigation)			
			AM		PM		AM		PM	
			LOS Criterion[2]	LOS	LOS Criterion[2]	LOS	LOS Criterion[2]	LOS	LOS Criterion[2]	LOS
1	Third Street/C Street (Signal)	D	0.49	A	0.61	B	0.66	B	0.75	C
24	Third Street/E Street (Stop Sign)[3]	D	4.2	A	2.9	A	**>50.0**	**F**	**>50.0**	**F**
	Eastbound E Street		*14.1*	*B*	*14.9*	*B*	*>50.0*	*F*	*35.2*	*E*
	Westbound E Street		*13.3*	*B*	*15.0*	*C*	*>50.0*	*F*	*>50.0*	*F*
2	Third Street/F Street (Signal)	D	0.41	A	0.48	A	0.67	B	0.86	D
3	Third Street/G Street (Stop Sign)[3]	D	3.2	A	9.9	A	46.7	E	**>50.0**	**F**
	Eastbound G Street		*17.9*	*C*	*18.3*	*C*	*>50.0*	*F*	*>50.0*	*F*
	Westbound G Street		*23.4*	*C*	*48.8*	*E*	*>50.0*	*F*	*>50.0*	*F*
4	Third Street/West Capitol Avenue (Removed)	D	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
5	Third Street/Tower Bridge Gateway (Signal)	D	**0.99**	**E**	**1.05**	**F**	**1.06**	**F**	**1.16**	**F**
6	Fifth Street/C Street (Signal)	D	0.47	A	0.60	B	0.68	B	0.74	C
7	Fifth Street/F Street (Stop Sign) [3]	C	**39.8**	**E**	**49.0**	**E**	**>50.0**	**F**	**>50.0**	**F**
	Eastbound F Street		*>50.0*	*F*	*>50.0*	*F*	*>50.0*	*F*	*>50.0*	*F*
	Westbound F Street		*>50.0*	*F*	*>50.0*	*F*	*>50.0*	*F*	*>50.0*	*F*
8	Fifth Street/G Street (Stop Sign)[3]	C	0.70	A	0.90	A	**>50.0**	**F**	**>50.0**	**F**
	Eastbound G Street		*11.4*	*B*	*12.1*	*B*	*12.6*	*B*	*15.3*	*C*
	Westbound G Street		*21.6*	*C*	*26.2*	*D*	*>50.0*	*F*	*>50.0*	*F*
9	Fifth Street/West Capitol Avenue (Stop Sign) [4]	D	0.70	A	0.80	A	0.90	A	1.60	A
10	Fifth Street/Tower Bridge Gateway (Signal)	D	0.54	A	0.60	B	0.73	C	0.83	D
11	Jefferson Boulevard/ West Capitol Avenue (Signal)	D	0.74	C	0.85	D	0.76	C	0.86	D
12	Jefferson Boulevard/ Sacramento Avenue (Signal)	C	0.73	C	0.72	C	0.78	C	0.76	C
13	Garden Avenue/ West Capitol Avenue (Signal)	D	0.62	B	0.73	C	0.66	B	0.79	C

Table 3.3-14 (continued)
Peak-Hour LOS: City of West Sacramento Study Intersections, Cumulative No Project and Cumulative Plus Project

Intersection		LOS Standard	Cumulative No Project				Cumulative Plus Project (No Mitigation)			
			AM		PM		AM		PM	
			LOS Criterion[2]	LOS	LOS Criterion[2]	LOS	LOS Criterion[2]	LOS	LOS Criterion[2]	LOS
14	South River Road/U.S. 50 WB Off-ramp (Signal	D	0.83	D	0.88	D	0.84	D	0.89	D
15	South River Road/U.S. 50 EB On-ramp (Signal)	D	0.50	A	0.55	A	0.52	A	0.55	A
16	Garden Street/Tower Bridge Gateway (Signal)	D	0.80	C	0.84	D	0.83	D	0.86	D

Bolding and underlining indicates intersection does not meet City LOS standard.

[1] LOS standard is C or better, unless intersection is within one-quarter mile of a freeway interchange or bridge crossing of the Sacramento River or Deep Water Ship Channel where LOS D is acceptable.

[2] For signalized intersections, the LOS criterion variable is volume-to-capacity ratio (V/C); for unsignalized intersections, the LOS criterion variable is average driver delay, in seconds.

[3] Minor street stop only; major street does not stop. Top row for minor street stop intersections is average driver delay for the entire intersection, on which LOS evaluations are based. Lower rows, in italics, provide driver delay and LOS for side street approaches.

[4] All-way stop intersection.

Source: DKS Associates 2005

Table 3.3-15 Roadway Daily Volume Threshold Analysis, Cumulative No Project and Cumulative Plus Project											
Analysis Segment					Cumulative No Project				Cumulative Plus Project		
#	Segment	Location	LOS Standard	Threshold Volume (ADT/Lane)[1]	Roadway Class	Lanes	ADT/ Lane	Meet LOS Standard?	Lanes	ADT/ Lane	Meet LOS Standard?
S1	F Street	West of Eighth Street	C	2,400	Residential Collector	2	1,600	Yes	2	1,850	Yes
S2	Third Street	Between G and Tower Bridge Gateway	D	3,200	Residential Collector	3	3,320	**<u>No</u>**	3	6,560	**<u>No</u>**
S3	Fourth Street	Between F and E Streets	D	1,500	Residential Local	2	70	Yes	2	480	Yes
S4	Fifth Street	Between F and E Streets	D	6,750	Arterial Low	4	3,670	Yes	4	3,930	Yes
S5	Fifth Street	Between G and Tower Bridge Gateway	D	6,750	Arterial Low	4	4,060	Yes	4	5,110	Yes
S6	Fourth Street	Between G and West Capitol Avenue	D	1,500	Residential Local	2	60	Yes	2	2,320	**<u>No</u>**
S7	F Street	Between Fifth and Sixth Streets	C	2,400	Residential Collector	2	1,640	Yes	2	1,890	Yes
S8	West Capitol Avenue	West of Fifth Street	C	6,000	Arterial Low	2	1,210	Yes	2	1,510	Yes
S9	Third Street	Between F and E Streets	D	3,200	Residential Collector	2	2,870	Yes	2	6,430	**<u>No</u>**
S10	G Street	Between Fifth and Sixth Streets	C	1,000	Residential Local	2	360	Yes	2	370	Yes
S11	SR 275	Between Third and Fifth Streets	D	9,000	Arterial High	4	4,530	Yes	4	5,800	Yes

<u>Bolding and underlining</u> indicates segment volume greater than suggested threshold volume.

[1] Adapted by DKS Associates from City of West Sacramento 2005.

Source: DKS Associates 2005

Table 3.3-16
Operations on State Highway Facilities, Existing and Existing Plus Project

Facility/ Analysis Type	Segment	MOE	Existing				Existing Plus Project			
			AM		PM		AM		PM	
			Calc.	LOS	Calc.	LOS	Calc.	LOS	Calc.	LOS
Major Merge or Diverge										
U.S. 50 WB	SR 275 On-ramp	V/C	0.67	C	0.73	C	0.67	C	0.73	C
U.S. 50 EB	SR 275 Off-ramp	V/C	0.22	C	0.16	C	0.24	C	0.18	C
Weaving Section										
U.S. 50 WB	I-5 to South River Road	Density	32.7	D	33.8	D	35.0	E	35.5	E
U.S. 50 EB	South River Road to I-5	Density	36.7	E	41.7	E	37.1	E	42.6	E
I-5 Southbound	to P Street On-ramp	Density	14.4	B	23.7	C	14.5	B	23.7	C
I-5 Northbound	P Street to J Street	Density	33.9	D	35.6	E	35.2	E	36.2	E
I-5 Southbound	J Street to Q Street	Density	27.2	C	38.2	E	27.2	C	38.2	E
Diverge–Auxiliary Lane										
I-5 Southbound	Richards Off-ramp	V/C	0.35	C	0.30	C	0.42	C	0.33	C

Source: DKS Associates 2005

Table 3.3-17
Operations on State Highway Facilities, Cumulative No Project and Cumulative Plus Project

Facility/ Analysis Type	Segment	MOE	Cumulative No Project				Cumulative Plus Project			
			AM		PM		AM		PM	
			Calc.	LOS	Calc.	LOS	Calc.	LOS	Calc.	LOS
Major Merge or Diverge										
U.S. 50 WB	SR 275 On-ramp	V/C	0.92	E	0.93	E	0.92	E	0.93	E
U.S. 50 EB	SR 275 Off-ramp	V/C	0.32	C	0.28	C	0.35	C	0.30	C
Weaving Section										
U.S. 50 WB	I-5 to South River Road	Density	**87.7**	**F**	**82.9**	**F**	**90.7**	**F**	**85.0**	**F**
U.S. 50 EB	South River Road to I-5	Density	**58.9**	**F**	**74.2**	**F**	**59.3**	**F**	**75.1**	**F**
I-5 Southbound	to P Street On-ramp	Density	18.4	B	**26.4**	**F**	18.5	B	**26.1**	**F**
I-5 Northbound	P Street to J Street	Density	**43.7**	**F**	**43.6**	**F**	**45.1**	**F**	**44.3**	**F**
I-5 Southbound	J Street to Q Street	Density	33.0	D	**46.4**	**F**	33.0	D	**46.4**	**F**
Diverge–Auxiliary Lane										
I-5 Southbound	Richards Off Ramp	V/C	0.52	C	0.52	C	0.59	C	0.55	C

Bolding and underlining indicates segment volume greater than suggested threshold volume.
Source: DKS Associates 2005

Table 3.3-18
Peak-Hour LOS: City of Sacramento Study Intersections, Existing and Existing Plus Project

	Intersection	LOS Standard	Existing				Existing Plus Project (No Mitigation)			
			AM		PM		AM		PM	
			LOS Criterion[1]	LOS	LOS Criterion[1]	LOS	LOS Criterion[1]	LOS	LOS Criterion[1]	LOS
17	Front Street/Capitol Mall	C	2.6	A	5.4	A	3.7	A	5.2	A
18	Third Street/Capitol Mall	C	18.8	B	20.7	C	18.2	B	21.5	C
19	Third Street/J Street	C	**<u>38.0</u>**	**<u>D</u>**	27.6	C	**<u>43.7</u>**	**<u>D</u>**	28.7	C
20	Third Street/P Street	C	9.8	A	15.4	B	10.3	B	18.7	B
21	Third Street/Q Street	C	11.6	B	16.6	B	13.3	B	17.2	B
22	I Street/Jibboom Street	C	21.5	C	24.5	C	28.1	C	30.9	C
23	Third Street/L Street	C	12.6	B	17.0	B	12.3	B	20.0	C

<u>Bolding and underlining</u> indicates intersection does not meet City LOS standard.
[1] Criterion is seconds of average driver delay
Source: DKS Associates 2005

Table 3.3-19
Peak-Hour LOS: City of Sacramento Study Intersections,
Cumulative No Project and Cumulative With Project

	Intersection	LOS Standard	Cumulative No Project				Cumulative With Project			
			AM		PM		AM		PM	
			LOS Criterion[1]	LOS	LOS Criterion[1]	LOS	LOS Criterion[1]	LOS	LOS Criterion[1]	LOS
17	Front Street/Capitol Mall	C	5.90	A	6.40	A	8.70	A	8.00	A
18	Third Street/Capitol Mall	C	**<u>47.6</u>**	**<u>D</u>**	29.4	C	**<u>61.7</u>**	**<u>E</u>**	**<u>38.8</u>**	**<u>D</u>**
19	Third Street/J Street	C	**<u>75.9</u>**	**<u>E</u>**	28.9	C	**<u>94.2</u>**	**<u>F</u>**	29.7	C
20	Third Street/P Street	C	11.3	B	**<u>38.7</u>**	**<u>D</u>**	11.5	B	**<u>57.4</u>**	**<u>E</u>**
21	Third Street/Q Street	C	17.6	B	21.0	C	19.1	B	21.3	C
22	I Street/Jibboom Street	C	31.70	C	**<u>39.10</u>**	**<u>D</u>**	**<u>55.20</u>**	**<u>E</u>**	**<u>78.80</u>**	**<u>E</u>**
23	Third Street/L Street	C	18.1	B	20.4	C	20.5	C	25.4	C

<u>Bolding and underlining</u> indicates intersection does not meet City LOS standard.
[1] Criterion is seconds of average driver delay
Source: DKS Associates 2005

Table 3.3-20
Parking Demand Rates

Use	Area Type	Units	Peak Time	Peak Parking Demand / Unit	
				Average	85th Percentile
Low/Mid-Rise Apartment	Suburban	DU	Overnight	1.20	1.46
Low/Mid-Rise Apartment	**Urban**	**DU**	**Overnight**	**1.02**	**1.17**
Townhouse/Condominium	Suburban	DU	Overnight	1.46	1.68
General Office	Suburban	KSF	9 a.m.–noon; 2–4 p.m.	2.84	3.44
General Office	**Urban**	**KSF**	**9 a.m.–4 p.m.**	**2.40**	**2.97**
Hotel	**NA**	**Room**	**noon–1 p.m.;7–10 p.m.**	**0.91**	**1.14**
Supermarket	Suburban	KSF	1 p.m.–5 p.m.	4.36	5.45
Supermarket	Urban	KSF	1 p.m.–2 p.m.; 3 p.m.–6 p.m.	2.27	2.83
Convenience Market	Urban	KSF	noon–1 p.m.	3.40	3.77
Quality Restaurant	NA	KSF	7 p.m.–8 p.m.	15.40	18.90
High-Turnover Restaurant	Suburban	KSF	11 a.m.–2 p.m.	10.10	16.10
High-Turnover Restaurant	Urban	KSF	11 a.m.–1 p.m.; 6 p.m.–8 p.m.	5.55	6.37
Dry Cleaners	Urban	KSF	11 a.m.–2 p.m.	1.40	2.44
Combined Commercial/Retail[1]	**Urban**	**KSF**	**11 a.m.–2 p.m.**	**3.16**	**3.85**

Bolding and underlining indicates use and demand rate used for project analysis.

1 Weighted average of supermarket, convenience store, high-turnover restaurant, and dry cleaners (all urban area rates. This combined rate developed to apply to the retail/commercial uses for project.

Source: DKS Associates, based on ITE 2004.

Table 3.3-21
Parking Demand and Supply

Project Subarea / Land Use	Units	Size	Parking Demand Avg.	Parking Demand 85%	Demand Adjustment Shared Parking[1]	Demand Adjustment Interna-lization[2]	Adjusted Parking Demand Avg.	Adjusted Parking Demand 85%	Parking Supply Min	Parking Supply Max	Parking Surplus (Deficit) Min	Parking Surplus (Deficit) Max
Washington Street Property												
Apartments	DU	550	561	644			561	644				
Mixed Commercial/Retail	KSF	40	126	154		-20%	101	123				
Washington Subtotal			687	798			662	767	900	1,000	133	338
River 1 Area												
Apartments	DU	150	153	176			153	176				
Mixed Commercial/Retail	KSF	42	133	162	-15%	-20%	90	110				
General Office	KSF	245	588	728	-15%		500	619				
Hotel Rooms	Rooms	300	273	342	-15%		232	291				
River 1 Subtotal			1,147	1,407			975	1,195	1,000	1,200	(195)	225
River 2 Area												
Apartments	DU	150	153	176			153	176				
River 2 Subtotal			153	176			153	176	300	300	124	147
River 3 Area												
General Office	KSF	600	1,440	1,782			1,440	1,782				
Mixed Commercial/Retail	KSF	20	63	77		-20%	50	62				
River 3 Subtotal			1,503	1,859			1,490	1,844	2,151	2,151	307	661
Project Total			3,490	4,239			3,280	3,982	4,351	4,651	369	1,371

Source: DKS Associates 2005

[1] Estimates of reduction in shared parking were based Urban Land Institute's Shared Parking Manual (1983).

2 Estimates of the demand reduction due to internalization of trips within a use based on output of City of West Sacramento travel demand model

Table 3.3-22
Peak-Hour LOS: Existing Plus Project with Mitigation

	Intersection	LOS Standard	Existing Plus Project (Unmitigated)				Existing Plus Project (Mitigated)			
			AM		PM		AM		PM	
			LOS Criterion[1]	LOS	LOS Criterion[1]	LOS	LOS Criterion[1]	LOS	LOS Criterion[1]	LOS
3	Third Street/G Street (Stop Sign)[2,3]	D	2.2	A	**<u>>50.0</u>**	**<u>F</u>**	0.41	A	0.65	B
	Eastbound G Street		*19.8*	*C*	*25.1*	*D*				
	Westbound G Street		*32.3*	*D*	*>50.0*	*F*				
12	Jefferson Blvd./Sacramento Avenue (Signal)	C	0.73	C	**<u>0.81</u>**	**<u>D</u>**	0.68	B	0.76	C
19	Third Street/J Street	C	**<u>43.7</u>**	**<u>D</u>**	28.7	C	**<u>No Mitigation</u>**			

<u>Bolding and underlining</u> indicates intersection does not meet Applicable LOS standard.

1 Criterion is V/C ratio for signalized intersections in City of West Sacramento. Criterion is seconds of average driver delay for signalized intersections in City of Sacramento, and all unsignalized intersections.

2 Mitigation includes installation of traffic signal.

3 All-way stop intersection.

Source: DKS Associates 2005

Table 3.3-23
Peak-Hour LOS: Cumulative Plus Project with Mitigation

	Intersection	LOS Standard	Cumulative Plus Project (Unmitigated)				Cumulative Plus Project (Mitigated)			
			AM		PM		AM		PM	
			LOS Criterion[1]	LOS	LOS Criterion[1]	LOS	LOS Criterion[1]	LOS	LOS Criterion[1]	LOS
24	Third Street/E Street (Stop Sign)[2,3]	D	**>50.0**	**F**	**>50.0**	**F**	0.67	B	0.77	C
	Eastbound E Street		*>50.0*	*F*	*35.2*	*E*				
	Westbound E Street		*>50.0*	*F*	*>50.0*	*F*				
3	Third Street/G Street (Stop Sign)[2,3]	D	**>46.7**	**E**	**>50.0**	**F**	0.69	B	0.74	C
	Eastbound G Street		*>50.0*	*F*	*>50.0*					
	Westbound G Street		*>50.0*	*F*	*>50.0*					
5	Third Street/Tower Bridge Gateway (Signal)	D	**1.06**	**F**	**1.16**	**F**	**Significant and Unavoidable**			
7	Fifth Street/F Street (Stop Sign)[2,3]	C	**>50.0**	**F**	**>50.0**	**F**	0.51	A	0.49	A
	Eastbound F Street		*>50.0*	*F*	*>50.0*	*F*				
	Westbound F Street		*>50.0*	*F*	*>50.0*	*F*				
8	Fifth Street/G Street (Stop Sign)[2,3]	C	>50.0	F	**>50.0**	**F**	0.41	A	0.57	A
	Eastbound G Street		*12.6*	*B*	*15.3*	*C*				
	Westbound G Street		*>50.0*	*F*	*>50.0*	*F*				
18	Third Street/Capitol Mall		**61.7**	**E**	**38.8**	**D**	**No Mitigation**			
19	Third Street/J Street		**94.2**	**F**	29.7	C	**No Mitigation**			
20	Third Street/P Street		11.5	B	**57.4**	**E**	**No Mitigation**			
22	I Street/Jibboom Street		**55.2**	**E**	**78.8**	**E**	**No Mitigation**			

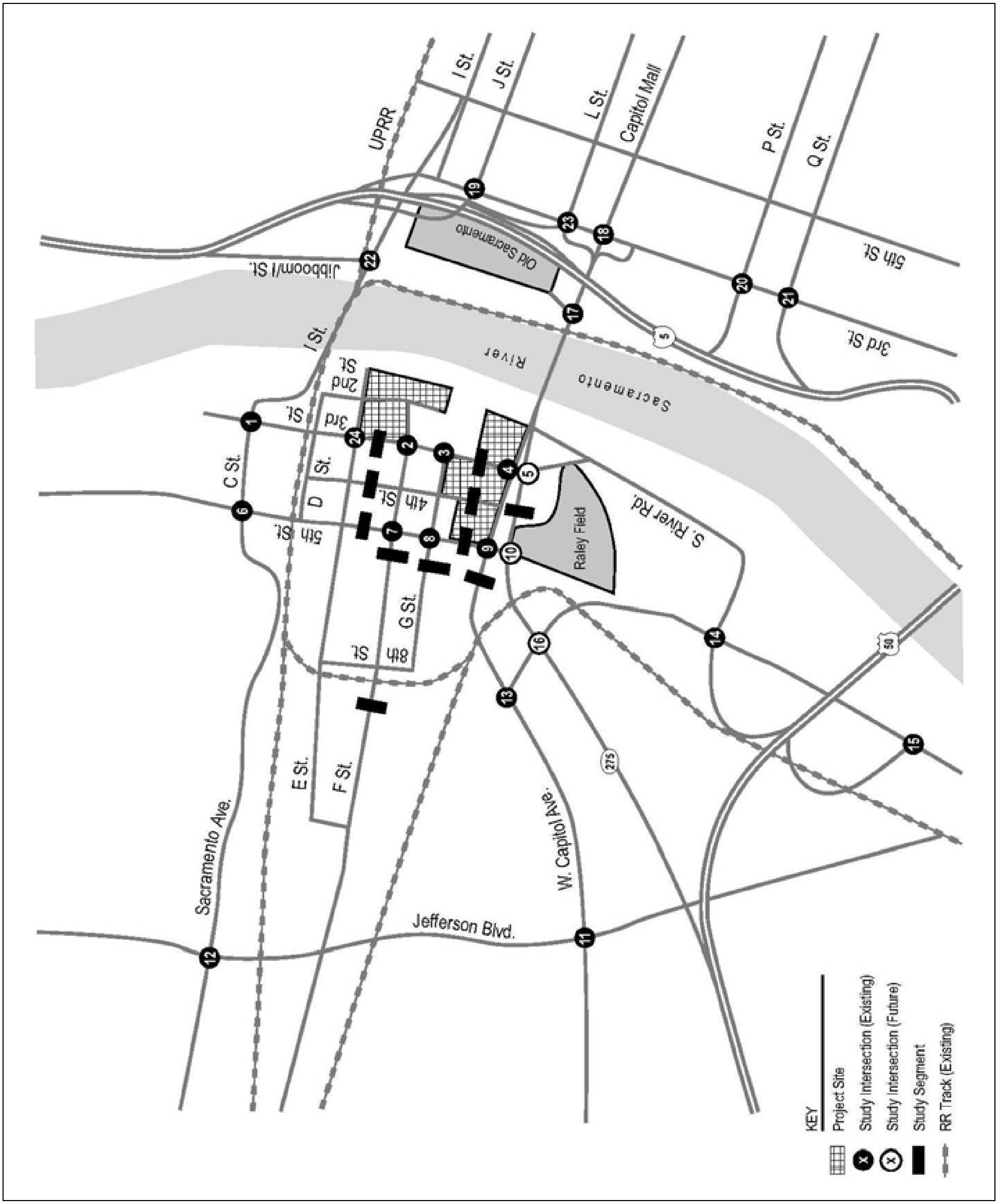
Bolding and underlining indicates intersection does not meet Applicable LOS standard.

[1] Criterion is V/C ratio for signalized intersections in City of West Sacramento. Criterion is seconds of average driver delay for signalized intersections in City of Sacramento, and all unsignalized intersections.

[2] Mitigation includes installation of traffic signal.

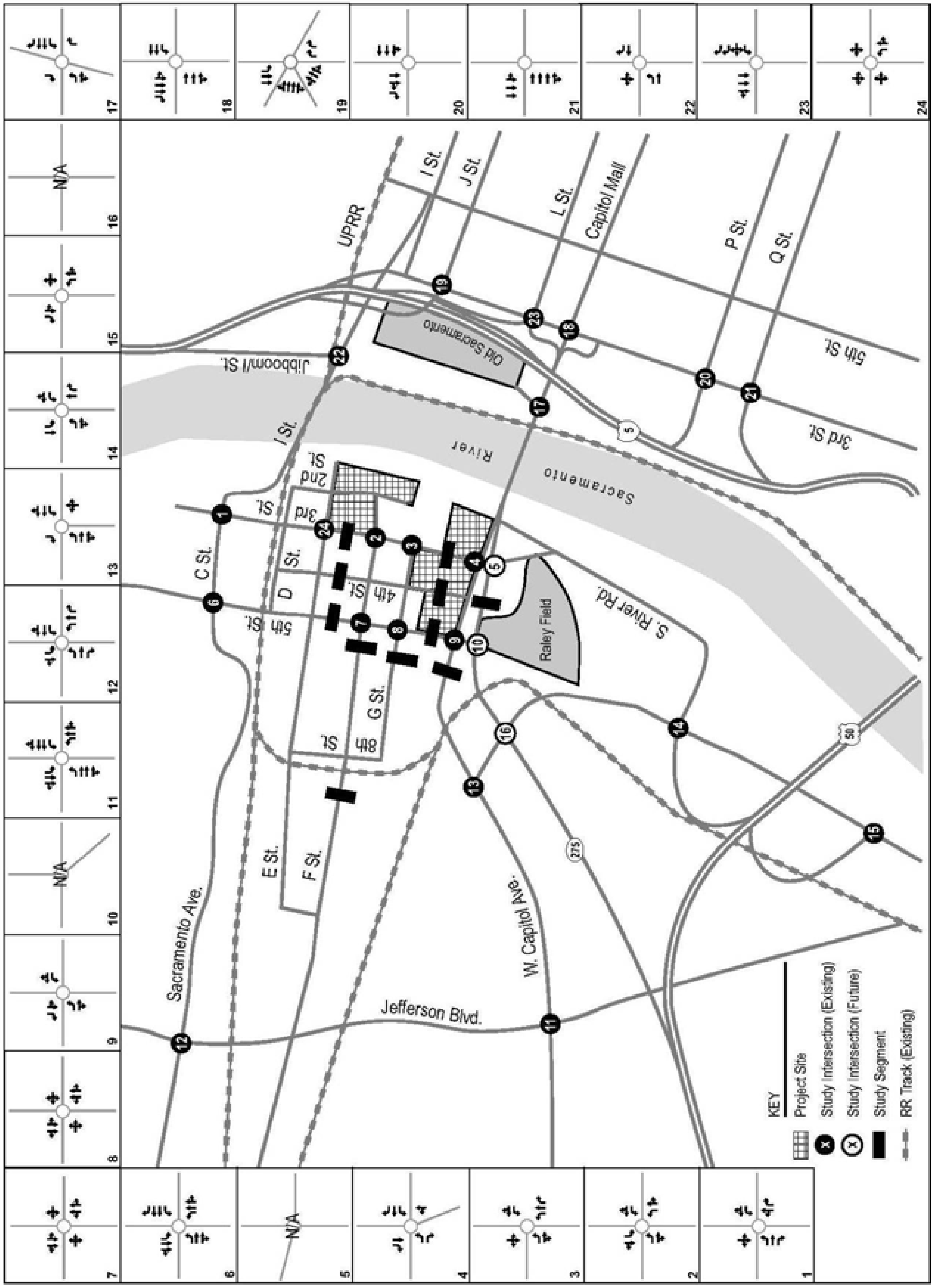
[3] All-way stop intersection.

Source: DKS Associates 2005



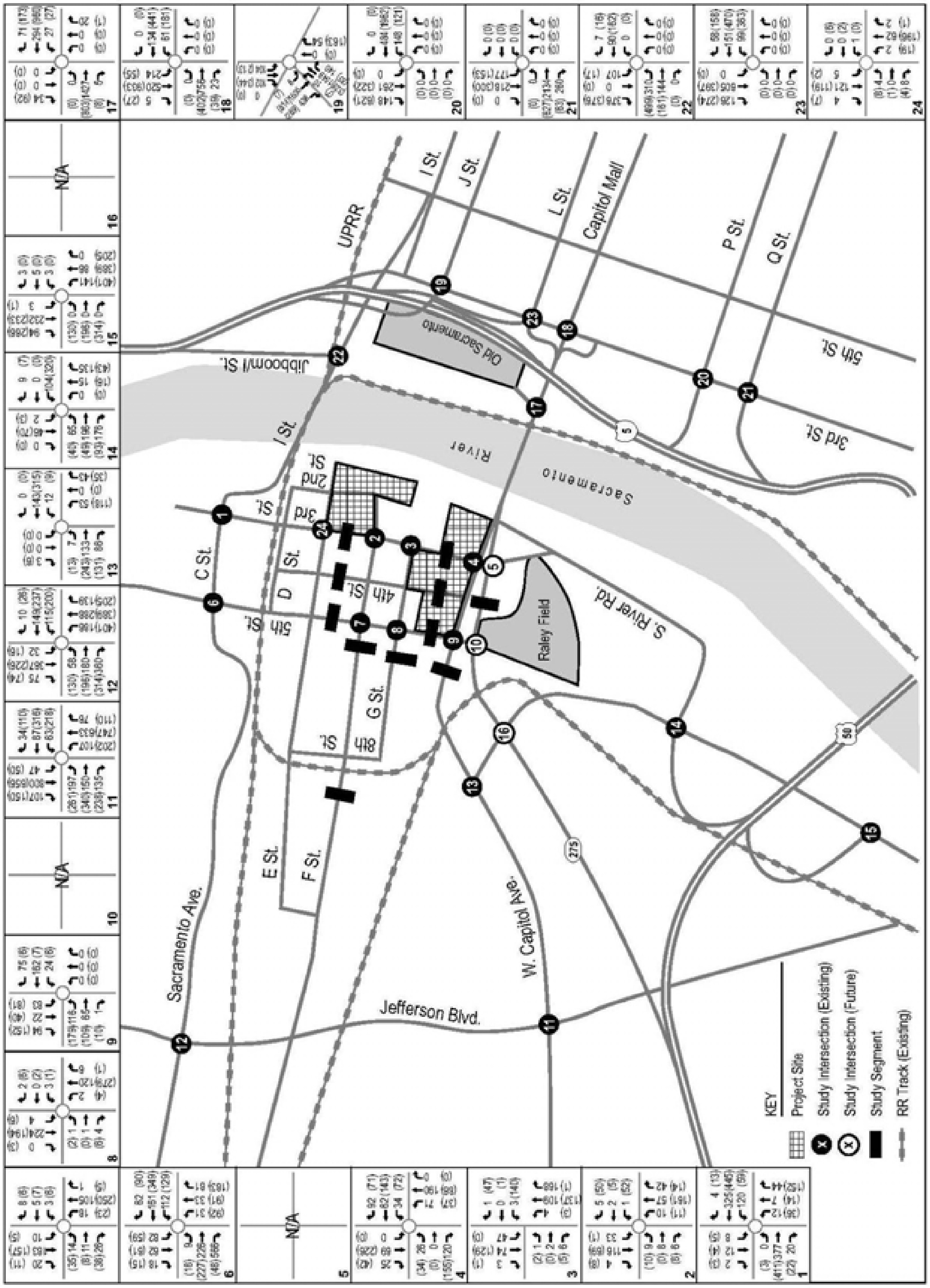
Source: DKS Associates 2005

Transportation and Circulation Project Study Area **Exhibit 3.3-1**



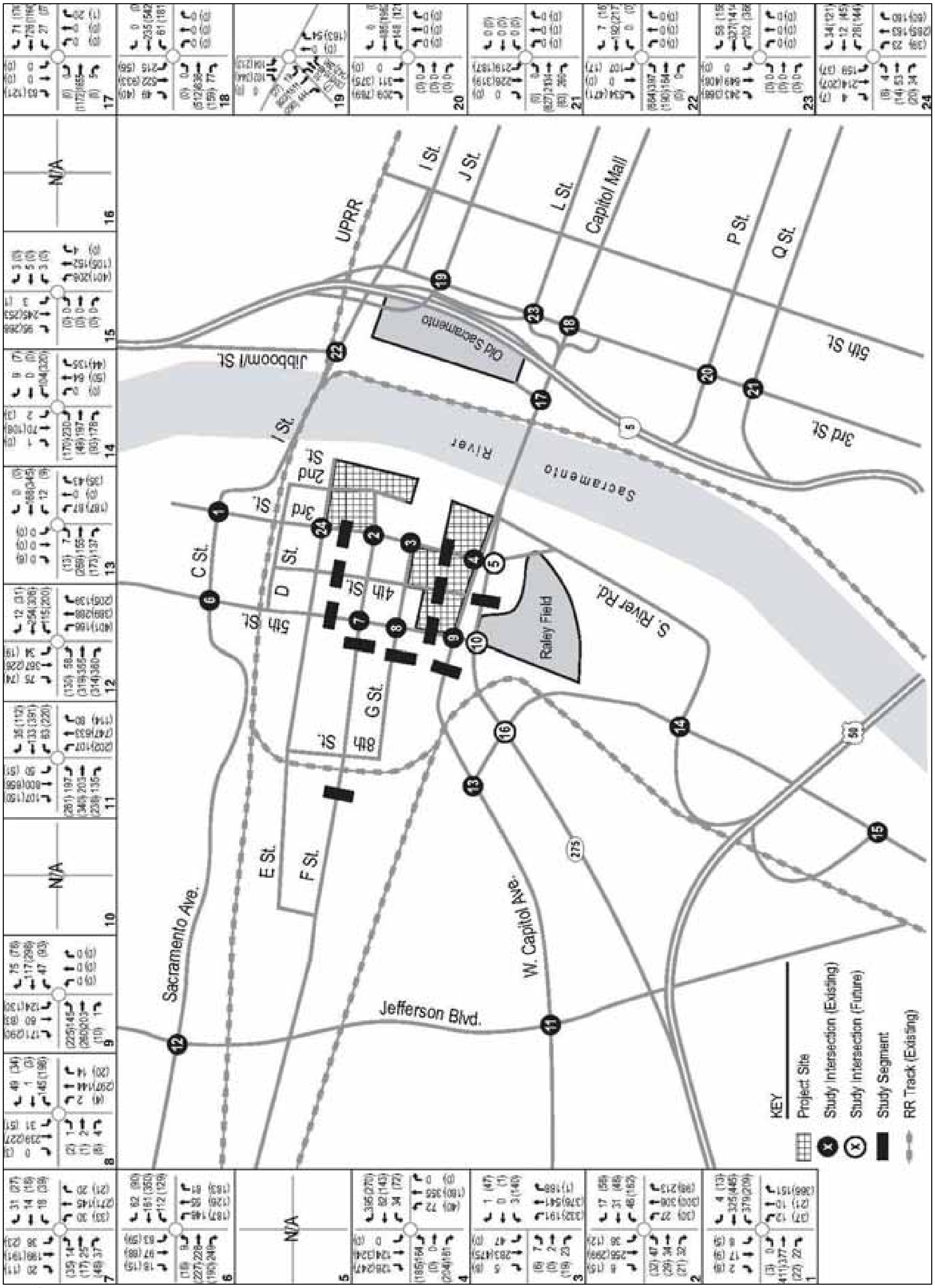
Source: DKS Associates 2005

Existing (2005) Study Intersection Lane Geometry **Exhibit 3.3-2**



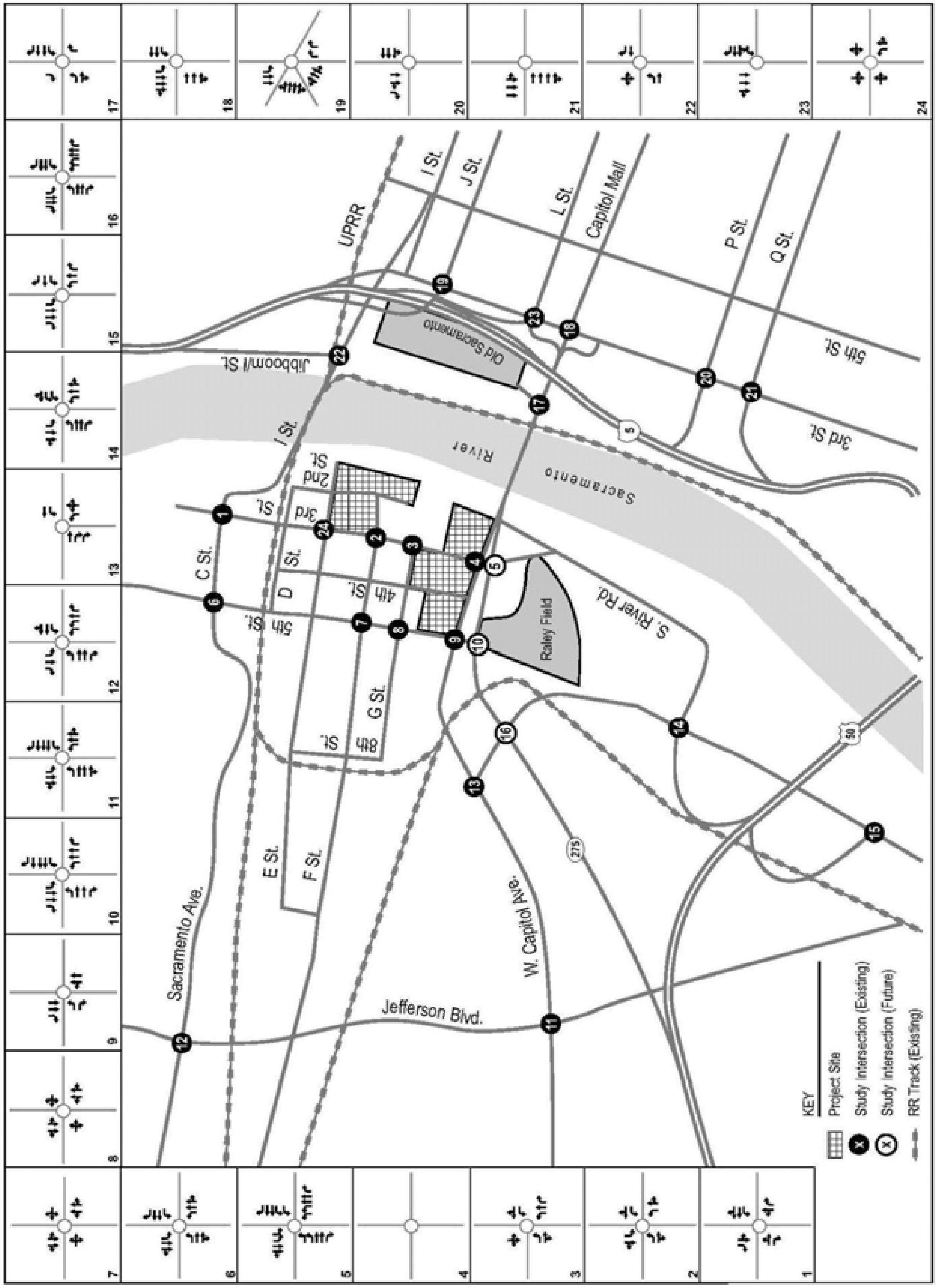
Source: DKS Associates 2005

Existing (2005) Peak-Hour Turning Movements **Exhibit 3.3-3**



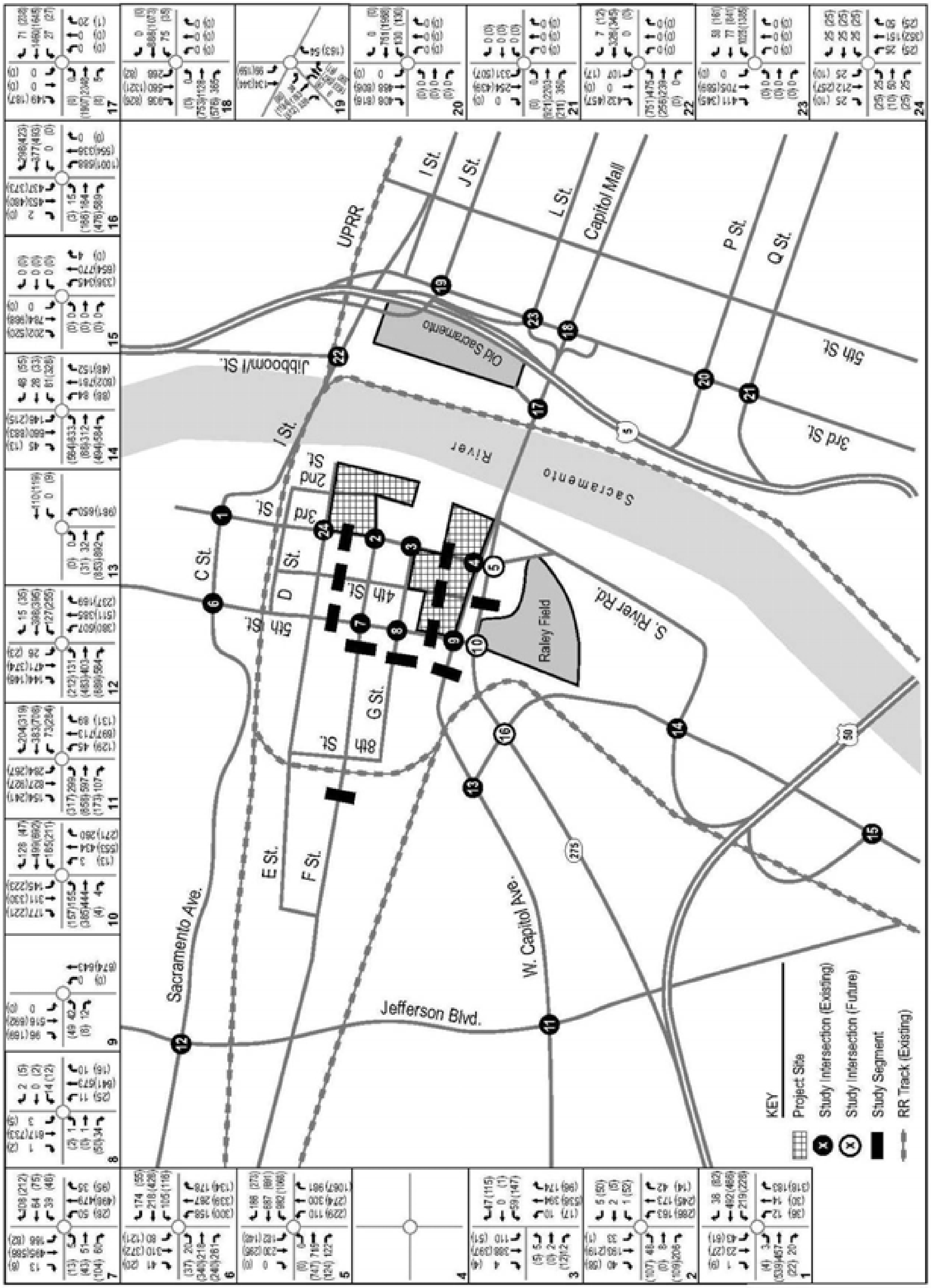
Source: DKS Associates 2005

Existing Plus Project Peak-Hour Turning Movements **Exhibit 3.3-4**



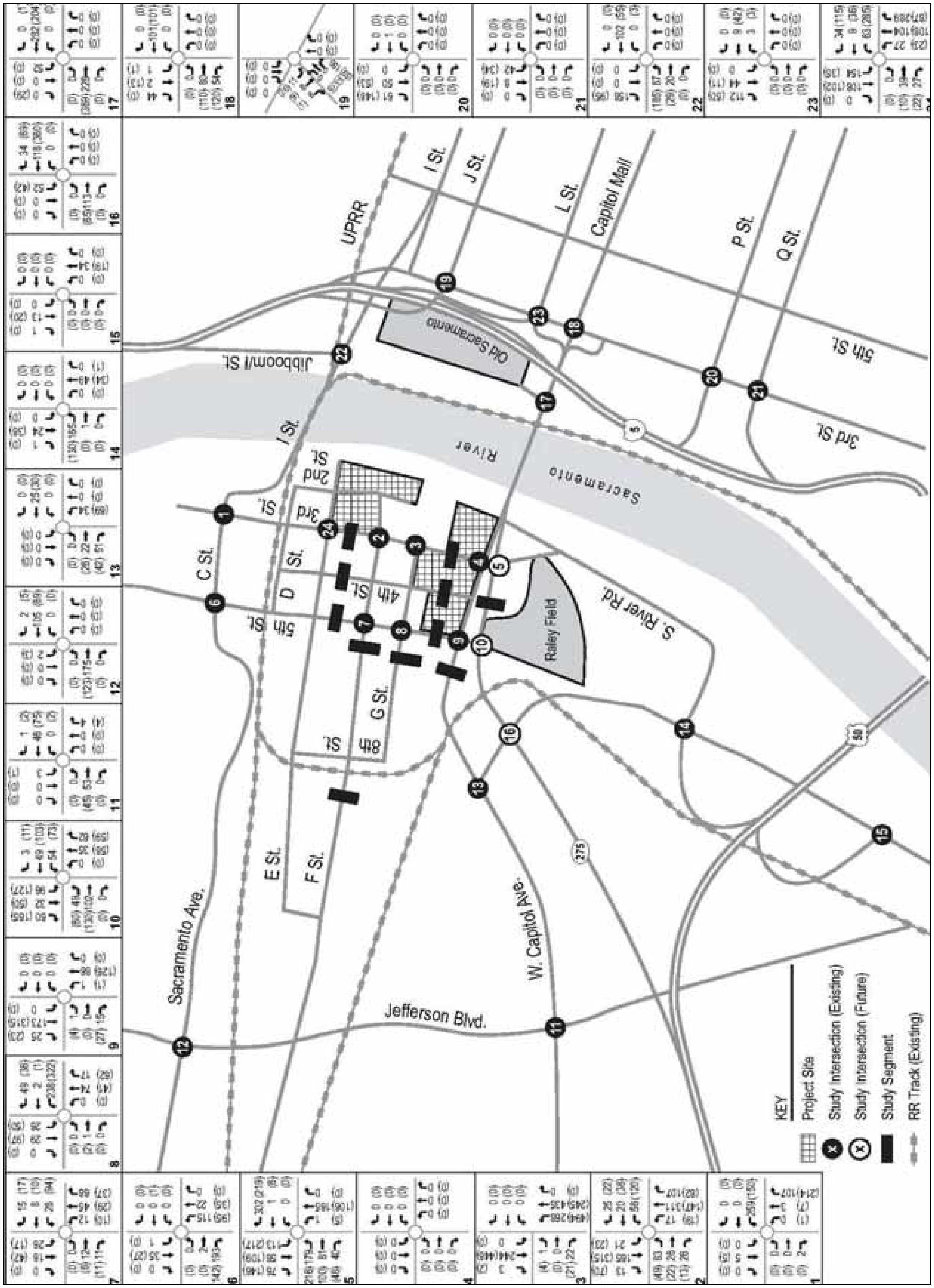
Source: DKS Associates 2005

Cumulative No-Project Study Intersection Lane Geometry **Exhibit 3.3-5**



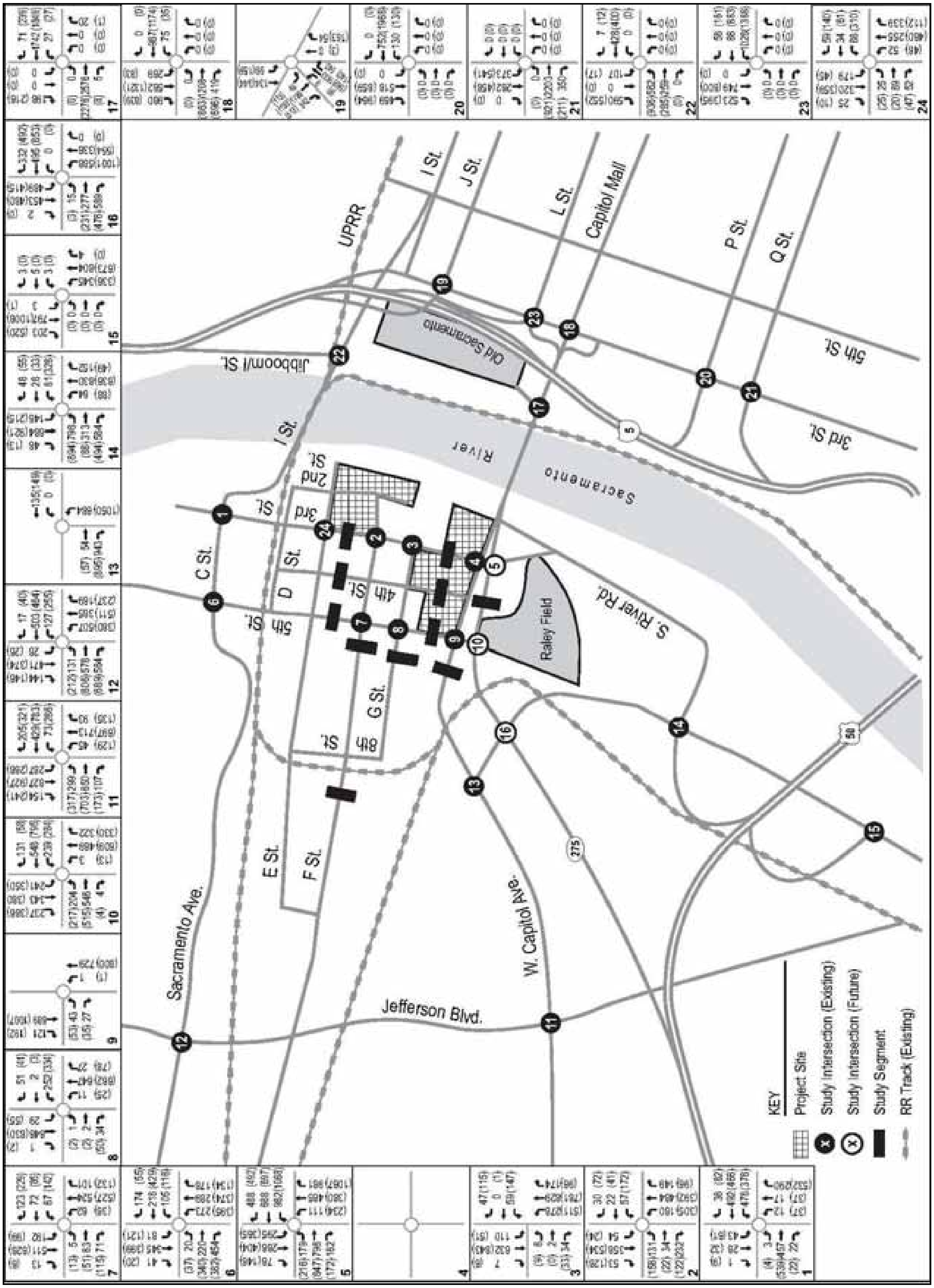
Source: DKS Associates 2005

Cumulative No-Project Peak-Hour Turning Movements **Exhibit 3.3-6**



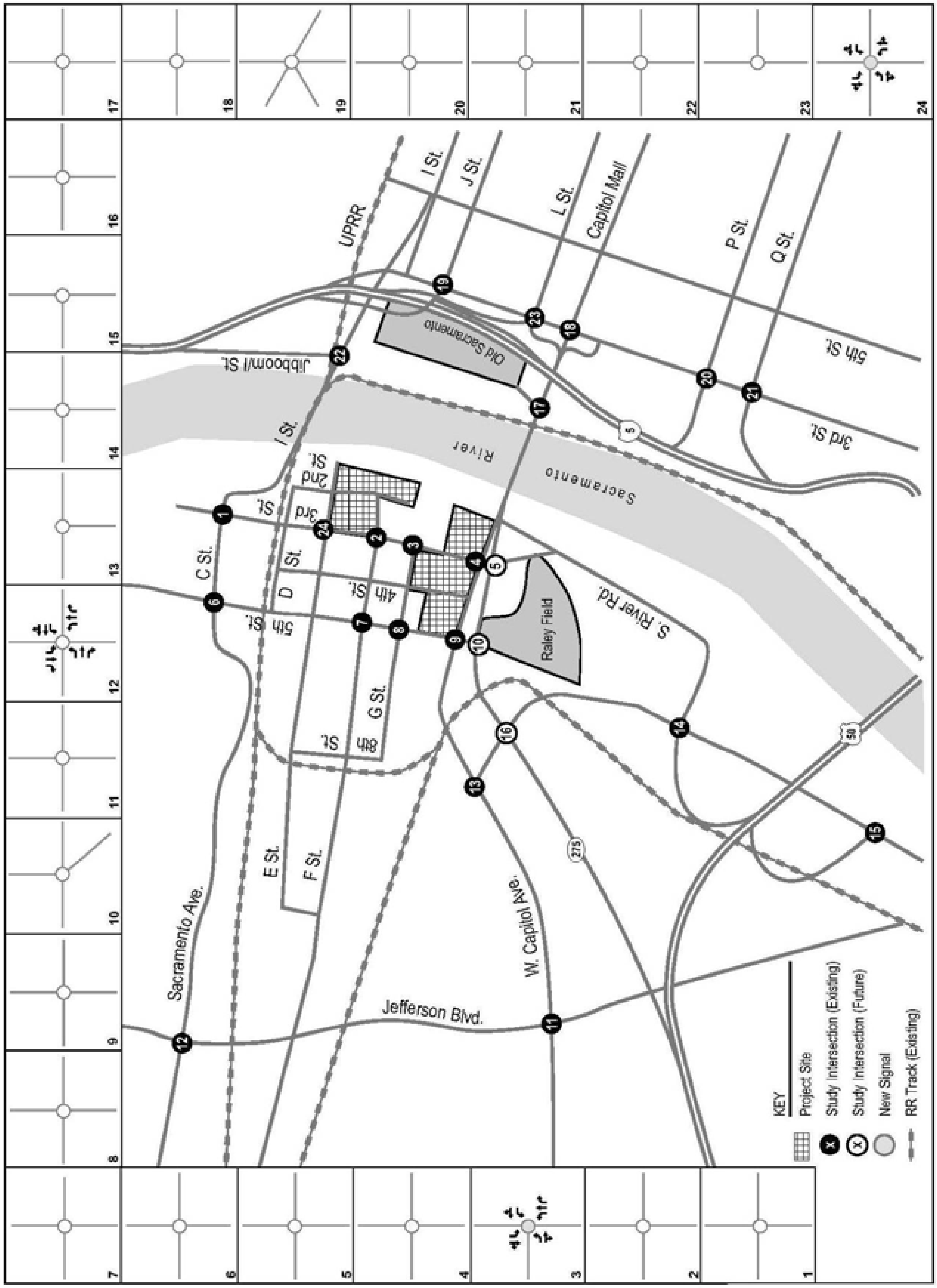
Source: DKS Associates 2005

Project-Only Turning Movements **Exhibit 3.3-7**



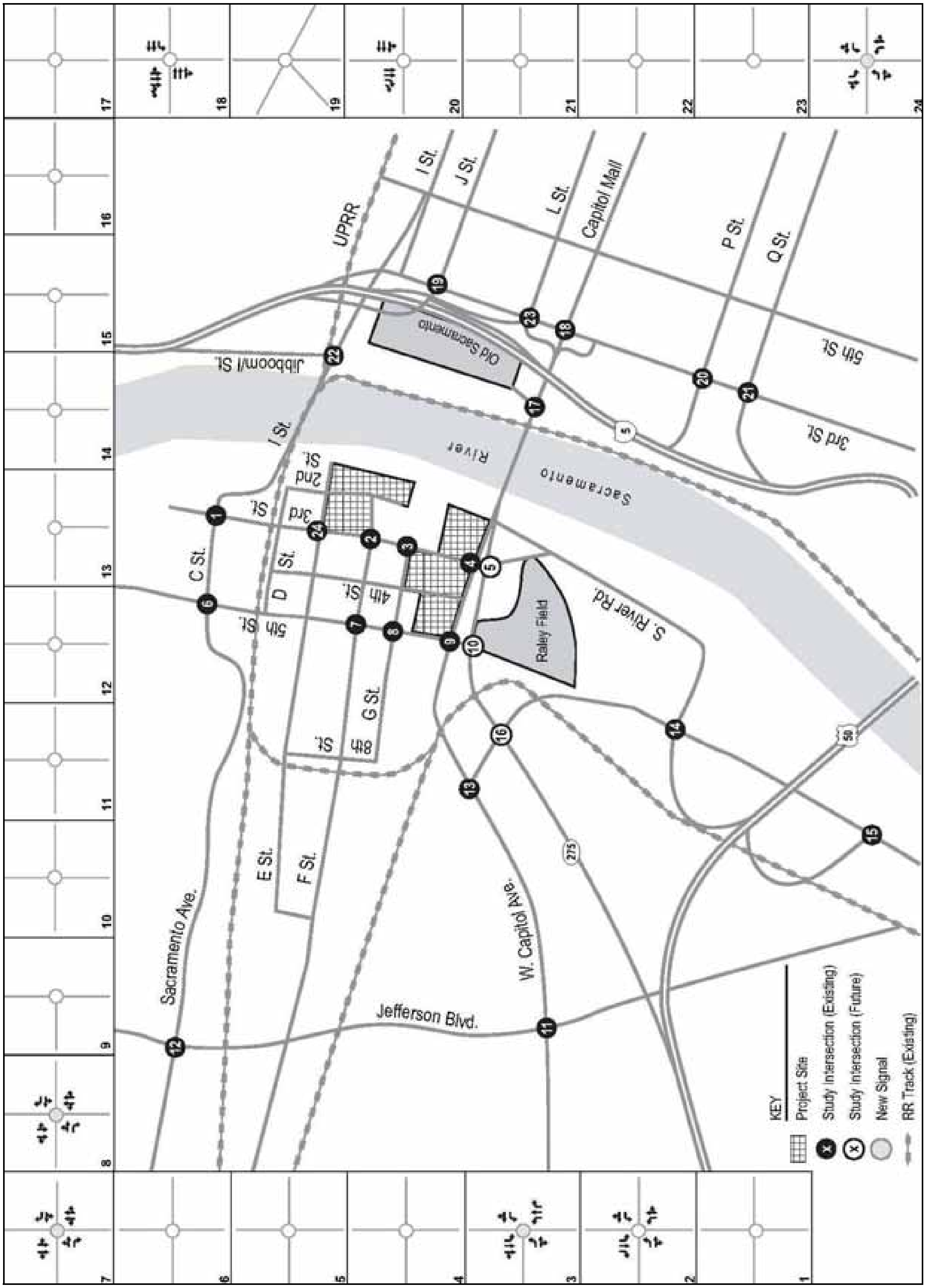
Source: DKS Associates 2005

Cumulative Plus Project Peak-Hour Turning Movements **Exhibit 3.3-8**



Source: DKS Associates 2005

Existing Plus Project Mitigated Intersection Lane Geometry **Exhibit 3.3-9**



Source: DKS Associates 2005

Cumulative Plus Project Mitigated Intersection Lane Geometry **Exhibit 3.3-10**

3.4 AIR QUALITY

This section includes a summary of applicable regulations, existing air quality conditions, and an analysis of potential short-term and long-term air quality impacts of the proposed project. The method of analysis for short-term construction, long-term regional (operational), local mobile source, toxic air, and odorous emissions is consistent with the recommendations of the Yolo-Solano Air Quality Management District (YSAQMD), as presented in its *Air Quality Handbook* (YSAQMD 2002). In addition, mitigation measures are recommended, as necessary, to reduce potentially significant air quality impacts.

3.4.1 REGULATORY FRAMEWORK

Air quality within Yolo County is regulated by such agencies as the U.S. Environmental Protection Agency (EPA), California Air Resources Board (ARB), and YSAQMD. Each of these agencies develops rules, regulations, policies, and/or goals to attain the goals or directives imposed through legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent.

Air quality regulations focus on the following air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health, and extensive health-effects criteria documents are available, they are commonly referred to as “criteria air pollutants.”

Air quality regulations also focus on toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs). A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. This contrasts with the criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established. EPA and ARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum available control technology (MACT) or best available control technology (BACT) for toxics to limit emissions. These in conjunction with additional rules set forth by YSAQMD establish the regulatory framework for TACs.

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

U.S. Environmental Protection Agency

At the federal level, EPA has been charged with implementing national air quality programs. EPA’s air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

The CAA required EPA to establish primary and secondary National Ambient Air Quality Standards (NAAQS) (Table 3.4-1). The primary and secondary standards protect public health and welfare, respectively. The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The federal Clean Air Act Amendments (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA has responsibility to review all state SIPs to determine conformation to the mandates of the CAAA and determine if implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

Table 3.4-1
Ambient Air Quality Standards and Yolo County Designations

Pollutant	Averaging Time	California		National Standards [4]		
		Standards [1, 2]	Attainment Status [3]	Primary [2,5]	Secondary [2,6]	Attainment Status [7]
Ozone [8]	1-hour	0.09 ppm ($180\ \mu g/m^3$)	N (Serious)	0.12 ppm ($235\ \mu g/m^3$)	Same as Primary Standard	N (Severe)
	8-hour	0.070 ppm	No State Standard	0.08 ppm ($157\ \mu g/m^3$)		N (Serious)
Carbon Monoxide (CO)	1-hour	20 ppm ($23\ mg/m^3$)	A	35 ppm ($40\ mg/m^3$)	–	A
	8-hour	9 ppm ($10\ mg/m^3$)		9 ppm ($10\ mg/m^3$)		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	–	–	0.053 ppm ($100\ \mu g/m^3$)	Same as Primary Standard	U/A
	1-hour	0.25 ppm ($470\ \mu g/m^3$)	A	–		–
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	–	0.030 ppm ($80\ \mu g/m^3$)	–	
	24-hour	0.04 ppm ($105\ \mu g/m^3$)	A	0.14 ppm ($365\ \mu g/m^3$)	–	U/A
	3-hour	–	–	–	0.5 ppm ($1300\ \mu g/m^3$)	
	1-hour	0.25 ppm ($655\ \mu g/m^3$)	A	–	–	–
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	$20\ \mu g/m^3$	N	$50\ \mu g/m^3$ [8]	Same as Primary Standard	U
	24-hour	$50\ \mu g/m^3$		$150\ \mu g/m^3$ [8]		

Table 3.4-1 (continued)
Ambient Air Quality Standards and Designations

Pollutant	Averaging Time	California		National Standards [4]		
		Standards [1, 2]	Attainment Status [3]	Primary [2,5]	Secondary [2,6]	Attainment Status [7]
Fine Particulate Matter ($PM_{2.5}$) [9]	Annual Arithmetic Mean	12 $\mu g/m^3$	U	15 $\mu g/m^3$	Same as Primary Standard	A (Recommended)
	24-hour	25 $\mu g/m^3$ (proposed)[10]	–	65 $\mu g/m^3$		
Lead [11]	30-day Average	1.5 $\mu g/m^3$	A	–	–	–
	Calendar Quarter	–	–	1.5 $\mu g/m^3$	Same as Primary Standard	A
Sulfates	24-hour	25 $\mu g/m^3$	A	**No Federal Standards**		
Hydrogen Sulfide	1-hour	0.03 ppm (42 $\mu g/m^3$)	U			
Vinyl Chloride [9]	24-hour	0.01 ppm (26 $\mu g/m^3$)	U/A			
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) because of particles when the relative humidity is less than 70%.	U			

Table 3.4-1 (continued)
Ambient Air Quality Standards and Designations

Pollutant	Averaging Time	California		National Standards [4]		
		Standards [1, 2]	Attainment Status [3]	Primary [2,5]	Secondary [2,6]	Attainment Status [7]

Notes: $\mu g/m^3$ = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; ppm = parts per million.

[1] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, particulate matter (PM_{10} and $PM_{2.5}$), 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.

[2] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°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.

[3] Unclassified (**U**): The data are incomplete and do not support a designation of attainment or nonattainment.
Attainment (**A**): The state standard for the pollutant was not violated at any site in the area during a 3-year period.
Nonattainment (**N**): There was a least one violation of a state standard for the pollutant in the area.
Nonattainment/Transitional (**NT**): A subcategory of the nonattainment designation signifying that the area is close to attaining the standard for that pollutant.

[4] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when 99% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. The $PM_{2.5}$ 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Nonattainment (**N**): Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.
Attainment (**A**): Any area that meets the national primary or secondary ambient air quality standard for the pollutant.
Unclassifiable (**U**): Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

[8] New federal 8-hour ozone and fine particulate matter standards were promulgated by EPA on July 18, 1997. Contact EPA for further clarification and current federal policies. A new state 8-hour ozone standard was promulgated by ARB on April 28, 2005.

[9] On June 20, 2002, ARB approved a staff recommendation to revise the PM_{10} annual average standard to 20 $\mu g/m^3$ and to establish an annual average standard for $PM_{2.5}$ of 12 $\mu g/m^3$. These standards took effect on July 5, 2003. Information regarding these revisions can be found at http://www.arb.ca.gov/research/aaqs/std-rs.htm.

[10] Staff of ARB and Office of Environmental Health Hazard Assessment proposed a 24-hour standard for $PM_{2.5}$ of 25 $\mu g/m^3$ in 2002 that is not yet adopted.

[11] ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Sources: ARB 2005a, 2005b, 2005c; EPA 2005a

Federal Hazardous Air Pollutant Program

Title III of the CAA required EPA to promulgate national emissions standards for HAPs (NESHAP). The NESHAP may differ between major sources and area sources of HAPs. (Major sources are defined as stationary sources with potential to emit more than 10 tons per year [TPY] of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources.) The emissions standards are to be promulgated in two phases. In the first phase (1992–2000), the EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), EPA is required to promulgate health risk–based emissions standards where deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards.

The CAAA required EPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions, addressing at a minimum benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Air Resources Board

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required ARB to establish California ambient air quality standards (CAAQS) (Table 3.4-1). In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standards setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals. The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide emission sources, and provides districts with the authority to regulate indirect sources.

Other ARB responsibilities include, but are not limited to, overseeing local air district compliance with California and federal laws, approving local air quality plans, submitting SIPs to EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

State Toxic Air Contaminant Programs

In California, TACs are regulated primarily through the Tanner Air Toxics Act (Assembly Bill 1807 [AB 1807]) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs, and adopted EPA's list of HAPs as TACs. Most recently, particulate exhaust emissions from diesel-fueled engines (diesel PM) was added to the ARB list of TACs.

Once a TAC is identified, ARB then adopts an Airborne Toxics Control Measure (ACTM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate MACT and/or BACT to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above specified levels:

- prepare a toxic emission inventory,
- prepare a risk assessment if emissions are significant,
- notify the public of significant risk levels, and
- prepare and implement risk reduction measure.

Additionally, ARB recently approved new guidance concerning land use compatibility with TAC sources called the *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB 2005d). It offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities. While the handbook is advisory and not regulatory, it offers the following recommendations that may be pertinent to the proposed project:

- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads carrying 100,000 vehicles per day, or rural roads carrying 50,000 vehicles per day.

- Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard.

- Avoid siting new sensitive land uses within 300 feet of a large gasoline station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gasoline-dispensing facilities.

- Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation using perchloroethylene (perc). For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult the local air district. Do not site new sensitive land uses in the same building with dry cleaning operations that use perc.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Yolo-Solano Air Quality Management District

YSAQMD attains and maintains air quality conditions in all of Yolo County and northeastern Solano County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean-air strategy of YSAQMD includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. YSAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA, CAAA, and CCAA.

In May 2002, YSAQMD released a revision to the previously adopted guidelines document. This revised *Air Quality Handbook* (YSAQMD 2002) is an advisory document that provides lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. The handbook contains the following applicable components:

- criteria and thresholds for determining whether a project may have a significant adverse air quality impact;

- specific procedures and modeling protocols for quantifying and analyzing air quality impacts;

- methods available to mitigate air quality impacts; and

- information for use in air quality assessments and CEQA reports that will be updated more frequently, such as air quality data and information pertaining to the regulatory setting, climate, and topography.

Air Quality Plans

YSAQMD in coordination with the air quality management districts and air pollution control districts of El Dorado, Placer, Sacramento, Solano, and Sutter Counties prepared and submitted the 1991 *Air Quality Attainment Plan* (AQAP) in compliance with the requirements set forth in the CCAA, which specifically addressed Sacramento Valley Air Basin's (SVAB's) nonattainment status for ozone and to a lesser extent, CO and PM less than or equal to 10 microns in diameter (PM_{10}).

The CCAA also requires a triennial assessment of the extent of air quality improvements and emission reductions achieved through the use of control measures. As part of the assessment, the attainment plan must be reviewed and, if necessary, revised to correct for deficiencies in progress and to incorporate new data or projections. The requirement of the CCAA for a first triennial progress report and revision of the 1991 AQAP was fulfilled with the preparation and adoption of the 1994 Ozone Attainment Plan (OAP). The OAP stresses attainment of ozone standards and focuses on strategies for reducing emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_X) in the Sacramento Federal Ozone Nonattainment Area, which comprises Sacramento County and parts of El Dorado, Placer, Solano, and Sutter Counties. It promotes active public involvement, enforcement of compliance with YSAQMD rules and regulations, public education in both the public and private sectors, development and promotion of transportation and land use programs designed to reduce vehicle miles traveled (VMT) within the Sacramento Federal Ozone Nonattainment Area, and implementation of stationary- and mobile-source control measures. The OAP became part of the SIP in accordance with the requirements of the CAAA and amended the 1991 AQAP. However, at that time the region could not show that the national ozone (1-hour) standard would be met by 1999. In exchange for moving the deadline to 2005, the region accepted a designation of "severe nonattainment" coupled with additional emission control requirements on stationary sources. Additional triennial reports that acted as incremental updates were also prepared in 1997, 2000, and 2003 in compliance with the CCAA.

The air quality management districts in the Sacramento Federal Ozone Nonattainment Area, including the YSAQMD, are also required to submit a rate-of-progress milestone evaluation in accordance with the CAAA. Milestone reports were prepared for 1996, 1999, and 2002. These milestone reports include compliance demonstrations indicating that the requirements have been met for the Sacramento Federal Ozone Nonattainment Area. The air quality attainment plans and reports present comprehensive strategies to reduce ROG, NO_X, and PM_{10} emissions from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules and regulations; enhancement of CEQA participation; implementation of a new and modified indirect-source review program; adoption of local air quality plans; and stationary-, mobile-, and indirect-source control measures.

Although the region has made significant progress in reducing ozone, a problem has arisen with regard to another requirement set forth in the CAA. The region's transportation plan must conform to the OAP (and thereby the SIP) and thus show that it does not harm the region's chances of attaining the ozone standard. The SIP is tied to a "motor vehicle emissions budget"; thus, transportation planners must ensure that emissions anticipated from transportation plans and improvement programs remain within this budget. The region is not required to update the SIP before the ozone (8-hour) plans are due in 2006. However, since a conformity lapse began October 4, 2004, an expedited process to prepare an OAP is under way (SMAQMD 2005).

Local Toxic Air Contaminant Programs

At the local level, air pollution control or management districts may adopt and enforce ARB's control measures regarding TACs. Under YSAQMD Rule 3-1 ("Permit Requirements"), Rule 3-4 ("New Source Review"), and Rule 3-8 ("Federal Operating Permit"), all sources that possess the potential to emit TACs are required to obtain permits from the district. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new-source review standards and air toxics control measures. YSAQMD limits emissions and public exposure to TACs through a number of programs. YSAQMD prioritizes

TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

City of West Sacramento General Plan

The following policies from the Natural Resources Element of the City's General Plan pertain to air quality and are relevant to the proposed project:

- **Policy D.1:** The City shall support and participate in local and regional air quality planning programs to ensure the earliest practical attainment and subsequent maintenance of federal and state ambient air quality standards.

- **Policy D.2:** The City shall utilize the CEQA process to identify and avoid or mitigate potentially significant air quality impacts of development proposals. The CEQA process shall be utilized to ensure early consultation with the YSAQMD concerning air quality issues associated with specific development proposals.

- **Policy D.3:** The City shall separate sensitive land uses from significant sources of air pollutants or odor emissions.

- **Policy D.5:** The City shall promote mixed uses for major development projects to reduce the length and frequency of vehicle trips.

- **Policy D.6:** The City shall develop a local circulation system that encourages and accommodates the use of transportation modes other than the automobile.

- **Policy D.7:** The City shall ensure that new development incorporates the infrastructure, facilities, and design standards necessary to encourage and accommodate transit, ridesharing and non-automobile travel modes.

- **Policy D.9:** The City shall develop and implement a local Transportation System Management (TSM) ordinance applicable to major projects and employers. The TSM ordinance should be developed in consultation with the YSAQMD, Yolo County, the SACOG [Sacramento Area Council of Governments], and the SMAQMD [Sacramento Metropolitan Air Quality Management District]. The TSM ordinance should distinguish between the physical facilities to be provided by developers and the trip reduction incentives and programs to be implemented by employers.

- **Policy D.11:** Major intersections shall be designed to minimize long vehicle delays which result in CO hot spots.

Washington Specific Plan

There are no policies in the *Washington Specific Plan* that are relevant to air quality issues in the project area.

3.4.2 EXISTING CONDITIONS

The proposed project site is located in the city of West Sacramento, Yolo County, California, which is under the local jurisdiction of YSAQMD. Yolo County is within the SVAB, which also comprises all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, and Yuba Counties; the eastern portion of Solano County; and the western portion of Placer County. Yolo County is also part of the Sacramento Federal Ozone Nonattainment Area, which comprises Sacramento County and parts of El Dorado, Placer, Solano, and Sutter Counties, all of which affect each other's air quality. Air quality in this area is determined by such natural factors as topography, climate, and meteorology, in addition to the presence of existing air pollution sources and conditions. These factors are discussed below.

TOPOGRAPHY, CLIMATE, AND METEOROLOGY

YSAQMD is located at the southwestern end of the SVAB. The SVAB is relatively flat, bordered by mountains to the east, west, and north. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin River Delta bringing with it pollutants from the heavily populated San Francisco Bay area. The climate is characterized by hot, dry summers and cool, rainy winters.

Characteristic of SVAB winter weather are periods of dense and persistent low-level fog, which are most prevalent between storms. Most precipitation in the area results from air masses that move in from the Pacific Ocean during the winter months. These storms usually move from the west or northwest. More than half the total annual precipitation falls during the winter rainy season (November through February); the average winter temperature is a moderate 49 degrees Fahrenheit (°F). During the summer, daily temperatures range from 50°F to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature.

The presence of inversions and other meteorological factors (e.g., wind speed and the presence of sunlight) influence the dispersion and transportation of air pollutant emissions. For example, during the summer, the intense heat and plentiful amount of sunlight provide the energy needed to fuel photochemical reactions between ROG and NO_X, which result in ozone formation. With respect to temperature inversions, the valley experiences two types that affect air quality. The first type of inversion layer contributes to smog problems by confining air pollutant emissions to a shallow layer near the ground. This type occurs in the summer, when sinking air near the ground forms a lid over the area. The second type of inversion occurs when the air near the ground cools while the air aloft remains warm. This type of inversion occurs during the winter nights and can cause localized air pollutant hot spots near sources because of poor dispersion. The summertime shallow surface-based inversions are present in the morning, but are often broken by daytime heating of the air layers near the ground. In the winter, temperature inversions dominate during the night and early morning hours but frequently dissipate by afternoon. During the winter, the greatest pollution problems are from CO and NO_X. High CO concentrations can occur in the winter when surface inversions and light winds are present.

EXISTING AMBIENT AIR QUALITY

Concentrations of criteria air pollutants (i.e., ozone, CO, NO_2, SO_2, PM, and lead) are used as indicators of ambient air quality conditions. A brief description of each criteria air pollutant including source types, health effects, and future trends is provided below along with the most current area designations and monitoring data for the project area.

Criteria air pollutant concentrations are measured at several monitoring stations in the SVAB. The station at 1309 T Street in Sacramento is the closest to the proposed project site with recent data for ozone, CO, NO_2, PM_{10}, and PM less than or equal to 2.5 microns in diameter ($PM_{2.5}$). In general, the ambient air quality measurements from this station are representative of the air quality in the vicinity of the proposed project site. Table 3.4-2 summarizes the air quality data from the most recent 3 years. Ambient air quality conditions with respect to each separate criteria pollutant are described below.

Both ARB and EPA use monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify those areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are “nonattainment,” “attainment,” and “unclassified.” “Unclassified” is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of the nonattainment designation, called “nonattainment-transitional.” The nonattainment-transitional designation is given to nonattainment areas that are progressing and nearing attainment. Attainment designations for Yolo County are shown in Table 3.4-1 for each criteria air pollutant.

Table 3.4-2
Summary of Annual Ambient Air Quality Data (2002–2004) from the Sacramento T Street Monitoring Station

	2002	2003	2004
Ozone			
State standard (1-hr avg, 0.09 ppm) National standard (1-hr/8-hr avg, 0.12/0.08 ppm)			
Maximum concentration (1-hr./8-hr avg., ppm)	0.190/ 0.091	0.111/ 0.091	0.105/ 0.075
Number of days state standard exceeded	6	4	1
Number of days national 1-hr/8-hr standard exceeded	0/3	0/1	0/0
Carbon Monoxide (CO)			
State standard (1-hr/8-hr avg, 20/9.1 ppm) National standard (1-hr/8-hr avg, 35/9.5 ppm)			
Maximum concentration (1-hr/8-hr avg, ppm)	5.6/4.31	5.8/3.40	3.5/2.96
Number of days state standard exceeded	0	0	0
Number of days national 1-hr/8-hr standard exceeded	0/0	0/0	0/0
Nitrogen Dioxide (NO_2)			
State standard (1-hr avg, 0.25 ppm) National standard (annual, 0.053 ppm)			
Maximum concentration (1-hr avg, ppm)	0.084	0.084	0.072
Number of days state standard exceeded	0	0	0
Annual average (ppm)	0.020	0.017	0.017
Respirable Particulate Matter (PM_{10})			
State standard (24-hr avg, 50 µg/m^3) National standard (24-hr avg, 150 µg/m^3)			
Maximum concentration (µg/m^3)	77	65	58
Number of days state standard exceeded (measured/calculated[1])	3/118.4	1/6.1	1/NA
Number of days national standard exceeded (measured/calculated[1])	0/0	0/0	0/NA
Fine Particulate Matter ($PM_{2.5}$)			
No separate state standard National standard (24-hr avg, 65 µg/m^3)			
Maximum concentration (µg/m^3)	73	49	46
Number of days national standard exceeded (measured[2])	4	0	0

Notes:

µg/m^3 = micrograms per cubic meter; NA = not available; ppm = parts per million.

The station at 1309 T Street in Sacramento is the station closest to the project site with recent data for ozone, CO, NO_2, PM_{10}, and $PM_{2.5}$.

[1] Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

[2] The number of days a measurement was greater than the level of the national daily standard. Measurements are collected every day, every 3 days, or every 6 days, depending on the time of year and the site's monitoring schedule. The number of days above the standards is not directly related to the number of violations of the standard for the year.

Sources: ARB 2005e,EPA 2005b

With respect to emission trends and forecasts for the SVAB, the emission levels for the ozone precursors ROG and NO_X have been trending downward since 1980. CO emissions have also been trending downward since 1975. On-road motor vehicles are the largest contributors to CO, ROG, and NO_X emissions in the SVAB. The implementation of stricter mobile-source (both on-road and other) emission standards will continue to decrease vehicle emissions. Control on stationary-source solvent evaporation and fugitive emissions will also continue to reduce ROG emissions. However, PM_{10} emissions are trending upward from 1995 levels. Trend and forecast information with respect to each criteria pollutant are described in more detail below (ARB 2005b).

OZONE

Ozone is a photochemical oxidant, a substance whose oxygen combines chemically with another substance in the presence of sunlight, and is the primary component of smog. Ozone is not directly emitted into the air, but is formed through complex chemical reactions between precursor emissions of ROG and NO_X in the presence of sunlight. ROG are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels.

Ozone located in the upper atmosphere (stratosphere) acts in a beneficial manner by shielding the earth from harmful ultraviolet radiation that is emitted by the sun. However, ozone located in the lower atmosphere (troposphere) is a major health and environmental concern. Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and clear skies provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often affects large areas. In general, ozone concentrations over or near urban and rural areas reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry (Godish 1991).

The adverse health effects associated with exposure to ozone pertain primarily to the respiratory system. Scientific evidence indicates that ambient levels of ozone affect not only sensitive receptors, such as asthmatics and children, but healthy adults as well. Exposure to ambient levels of ozone ranging from 0.10 to 0.40 parts per million (ppm) for 1 to 2 hours has been found to significantly alter lung functions by increasing respiratory rates and pulmonary resistance, decreasing tidal volumes, and impairing respiratory mechanics. Ambient levels of ozone above 0.12 ppm are linked to symptomatic responses that include such symptoms as throat dryness, chest tightness, headache, and nausea (Godish 1991).

In 1997, EPA promulgated a new 8-hour ozone standard in recognition of impacts resulting from daylong exposure. On April 15, 2004, EPA designated areas of the country that exceed the 8-hour ozone standard as nonattainment. The designations became effective on June 15, 2004, and incorporate air quality data for the years 2001–2003. These designations will trigger new planning requirements for the 8-hour standard.

CARBON MONOXIDE

CO is a colorless, odorless, and poisonous gas produced by incomplete burning of carbon in fuels, primarily from mobile (transportation) sources. In fact, 77% of the nationwide CO emissions are from mobile sources. The other 23% consists of CO emissions from wood-burning stoves, incinerators, and industrial sources.

CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, resulting in a drastic reduction in the amount of oxygen available to the cells. Adverse health effects associated with exposure to CO concentrations include such symptoms as dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (EPA 2005a).

The highest concentrations are generally associated with cold, stagnant weather conditions that occur during the winter. In contrast to ozone, which tends to be a regional pollutant, CO problems tend to be localized.

NITROGEN DIOXIDE

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major artificial sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2 (EPA 2005a). The combined emissions of NO and NO_2 are referred to as NO_X, which are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local NO_X emission sources.

Inhalation is the most common route of exposure to NO_2. Because NO_2 has relatively low solubility in water, the principal site of toxicity is in the lower respiratory tract. The severity of the adverse health effects depends primarily on the concentration inhaled rather than the duration of exposure. An individual may experience a variety of acute symptoms during or shortly after exposure, including coughing, difficulty with breathing, vomiting, headache, and eye irritation. After a period of approximately 4–12 hours, an exposed individual may experience chemical pneumonitis or pulmonary edema with breathing abnormalities, cough, cyanosis, chest pain, and rapid heartbeat. Severe, symptomatic NO_2 intoxication after acute exposure has been linked on occasion with prolonged respiratory impairment with such symptoms as chronic bronchitis and decreased lung functions.

SULFUR DIOXIDE

SO_2 is produced by such stationary sources as coal and oil combustion, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO_2 exposure pertain to the upper respiratory tract. SO_2 is a respiratory irritant with constriction of the bronchioles occurring with inhalation of SO_2 at 5 ppm or more. On contact with the moist mucous membranes, SO_2 produces sulfurous acid, which is a direct irritant. Concentration rather than duration of the exposure is an important determinant of respiratory effects. Exposure to high SO_2 concentrations may result in edema of the lungs or glottis and respiratory paralysis.

PARTICULATE MATTER

Particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. Particles of this size or smaller can be inhaled deep into the lungs. PM_{10} is typically emitted directly into the air from fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by condensation and/or transformation of SO_2 and ROG (EPA 2005a). $PM_{2.5}$ includes a subgroup of fine particles that have an aerodynamic diameter of 2.5 micrometers or less.

The adverse health effects associated with PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons (PAH), and other toxic substances adsorbed onto fine particulate matter, which is referred to as the piggybacking effect, or with fine dust particles of silica or asbestos. Generally, adverse health effects associated with PM_{10} may result from both short-term and long-term exposure to elevated concentrations and may include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, alterations to the immune system, carcinogenesis, and premature death (EPA 2005a). $PM_{2.5}$ poses an increased health risk because the particles can more easily deposit deep in the lungs and contain substances that are particularly harmful to human health.

In 1982, ARB adopted 24-hour average and annual average PM_{10} standards. NAAQS for PM_{10} have been in place since 1987. However, California's PM_{10} standards are more protective of health.

In June 2002, ARB adopted recommendations to lower the level of the PM_{10} annual standard from 30 micrograms per cubic meter ($\mu g/m^3$) to 20 $\mu g/m^3$ in addition to establishing a new annual $PM_{2.5}$ standard of 12 $\mu g/m^3$. EPA promulgated new NAAQS for $PM_{2.5}$ in 1997 to complement the national PM_{10} standards. In early 2004, ARB transmitted recommendations for area designations for the national $PM_{2.5}$ standards to EPA. EPA's final designations will become effective sometime in 2005.

LEAD

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, as discussed in detail below, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. EPA banned the use of leaded gasoline in highway vehicles in December 1995 (EPA 2005a).

As a result of EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector have declined dramatically (95% between 1980 and 1999), and levels of lead in the air decreased by 94% between 1980 and 1999. Transportation sources, primarily airplanes, now contribute only 13% of lead emissions. A recent National Health and Nutrition Examination Survey reported a 78% decrease in the levels of lead in people's blood between 1976 and 1991. This dramatic decline can be attributed to the move from leaded to unleaded gasoline (as well as the removal of lead from soldered cans) (EPA 2005a).

The decrease in lead emissions and ambient lead concentrations over the past 25 years is California's most dramatic air quality success story. The rapid decrease in lead concentrations can be attributed primarily to phasing out the lead in gasoline. This phase-out began during the 1970s, and subsequent ARB regulations have virtually eliminated all lead from gasoline now sold in California. All areas of the state are currently designated as attainment for the state lead standard (EPA does not designate areas for the national lead standard). Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose "hot spot" problems in some areas. As a result, ARB identified lead as a TAC.

TOXIC AIR CONTAMINANTS

According to the 2005 *California Almanac of Emissions and Air Quality*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies on chemical speciation to estimate concentrations of diesel PM. In addition to diesel PM, benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perc are the TACs that pose the greatest existing ambient risks in California, for which data are available.

Diesel PM poses the greatest health risk among the 10 TACs mentioned. Based on receptor modeling techniques, ARB estimated the health risk to be 360 excess cancer cases per million people in the SVAB. Since 1990, the health risk of diesel PM has been reduced by 52%. Overall, levels of most TACs have gone down since 1990 except for para-dichlorobenzene and formaldehyde.

3.4.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Short-term construction-generated regional criteria air pollutant and precursor emissions were quantified using the ARB-approved URBEMIS 2002 Version 8.7.0 computer model. Modeling was based on project-specific data (e.g., assumed duration of construction, amount of land to be disturbed/graded, types of equipment to be used, number of construction employees) and URBEMIS default settings. Predicted short-term construction-generated emissions were compared with applicable YSAQMD thresholds for determination of significance.

Long-term (i.e., operational) regional criteria air pollutant and precursor emissions, including stationary- and mobile-source emissions, were also quantified using the URBEMIS 2002 Version 8.7.0 computer model. Modeling was based on URBEMIS default settings under 2012 conditions and trip generation data from the traffic analysis. Predicted long-term operational emissions were compared with applicable YSAQMD thresholds for determination of significance.

Local mobile-source CO emissions were evaluated in accordance with the recommendations contained in the *Transportation Project-Level CO Protocol* (1995) adopted by the Caltrans. Local mobile-source impacts are typically quantified for congested areas (i.e., LOS E or worse) with high background CO concentrations. Local mobile-source emissions were modeled where deemed necessary using the CALINE4 model with emission factors from EMFAC 2002. CALINE4 modeling was performed in accordance with methodologies recommended by YSAQMD and Caltrans. Modeled CO concentrations were compared with applicable ambient air quality standards for determination of significance.

Impacts associated with exposure to TACs were analyzed based on information and guidance provided in ARB's *Air Quality and Land Use Handbook* (ARB 2005d).

All other impacts were assessed in accordance with the recommendations set forth in the *CEQA Air Quality Handbook* (YSAQMD 2002).

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on the State CEQA Guidelines and on the YSAQMD *CEQA Air Quality Handbook* (YSAQMD 2002). Based on the State CEQA Guidelines, an air quality impact is considered significant if implementation of the proposed project would do any of the following:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard (i.e., NAAQS or CAAQS) or contribute substantially to an existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment (i.e., ozone and PM_{10}) under an applicable federal or state ambient air quality standard;
- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

The proposed project does not contain any land uses that would create objectionable odors affecting a substantial number of people. This impact mechanism is not considered further.

Based on the YSAQMD *CEQA Air Quality Handbook* (YSAQMD 2002) and discussions with YSAQMD staff (O'Brien, pers. comm., 2005), an air quality impact is considered significant if any of the following conditions would occur as a result of implementation of the proposed project:

- Construction-generated criteria air pollutant or precursor emissions would exceed the YSAQMD-recommended thresholds of 82 pounds per day (lb/day) for ROG and NO_X, or 150 lb/day for PM_{10}. The project impact would also be considered significant if construction activities would result in or substantially contribute to emissions concentrations (e.g., PM_{10}) that exceed the NAAQS or CAAQS.

- Long-term regional criteria air pollutant or precursor emissions would exceed the YSAQMD-recommended threshold of 82 lb/day for ROG and NO_X, or 150 lb/day for $PM_{10.}$ The project impact would also be considered significant if operations would result in or substantially contribute to emissions concentrations (e.g., PM_{10}) that exceed the NAAQS or CAAQS. YSAQMD has stated that the regional threshold for CO of 550 lb/day should no longer be applied to operational emissions and instead CO should be analyzed separately as a localized pollutant (O'Brien, pers. comm., 2005), as described below.

- The exposure of sensitive receptors to TAC emissions would exceed 10 in 1 million for the Maximally Exposed Individual (MEI) to contract cancer, and/or a Hazard Index of 1 for the MEI.

- Local mobile-source emissions would exceed or substantially contribute to CO concentrations that violate the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm.

IMPACT ANALYSIS

IMPACT 3.4-1 **Air Quality – Short-Term Construction-Generated Emissions of ROG, NO_X, and PM_{10}.** *Construction of the proposed project would result in emissions of ROG and NO_X, precursors to ozone, which exceed the YSAQMD significance threshold. In addition, because Yolo County is currently designated as a nonattainment area for both ozone and PM_{10}, construction emissions of ozone precursors and PM_{10} would potentially result in or substantially contribute to pollutant concentrations that exceed the NAAQS and CAAQS. As a result, this impact is considered* ***significant****.*

Construction emissions are described as "short-term" or temporary in duration and have the potential to represent a significant impact with respect to air quality, especially in the case of PM_{10}. Fugitive dust emissions are associated primarily with site preparation and vary as a function of multiple parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and VMT on-site and off-site. ROG and NO_X emissions are associated primarily with construction equipment exhaust.

Construction of the proposed project would temporarily generate emissions of ROG, NO_X, and PM_{10} from site grading and excavation, motor vehicle exhaust associated with construction equipment, employee commute trips, material transport (especially on unpaved surfaces), application of architectural coatings, asphalt paving, and other construction operations. Site grading would generally occur in the first phase of construction before other activities begin. Other construction activities, such as building construction, application of architectural coatings, and asphalt paving, then follow, and may occur simultaneously at some point during the construction period.

Short-term construction emissions of ROG, NO_X, and PM_{10} were estimated using the ARB-approved URBEMIS 2002 Version 8.7.0 computer program as recommended by YSAQMD (O'Brien, pers. comm., 2005). URBEMIS 2002 is designed to model construction emissions for land use development projects and allows for the input of project-specific information. Table 3.4-3 summarizes the modeling results for daily construction emissions for

Table 3.4-3
Summary of Predicted Short-Term Construction Emissions (lb/day) (2007–2011) [1]

	2007			2008			2009			2010			2011		
	ROG	NO_X	PM_{10}	ROG	NO_X	PM_{10}	ROG	NO_X	PM_{10}	ROG	NO_X	PM_{10}	ROG	NO_X	PM_{10}
Washington Street Property (May 2007–March 2009)															
Maximum Daily Construction Emissions, Unmitigated	30.65	197.67	29.40	30.55	191.38	7.41	73.62	238.54	8.55						
River 1 Area (March 2007–February 2009)															
Maximum Daily Construction Emissions, Unmitigated	30.70	197.70	29.40	66.09	192.15	7.63	71.24	217.09	7.92						
River 2 Area (March 2008–February 2011)															
Maximum Daily Construction Emissions, Unmitigated				29.67	190.84	7.26	29.65	184.65	6.55	36.23	178.92	5.96	41.33	208.96	6.87
River 3 Area (March 2007–February 2011)															
Maximum Daily Construction Emissions, Unmitigated	30.94	197.85	32.94	30.82	191.54	7.45	30.69	185.30	6.74	53.98	210.32	7.28	53.98	210.32	7.28
Combined Maximum Daily Total, Unmitigated															
	92.29	593.22	91.74	157.13	765.91	29.75	205.20	825.58	29.76	90.21	389.24	13.24	95.31	419.28	14.15
YSAQMD Threshold (lb/day)															
	82	82	150	82	82	150	82	82	150	82	82	150	82	82	150

[1] Emissions generated by construction are based on default emission factors and time durations of URBEMIS2002, except that an emission factor of 0.0013 pound per square foot was used for architectural coatings as per YSAQMD guidance (O'Brien, pers. comm., 2005). Emission levels generated by construction equipment are expected to be slightly lower in future years with the ongoing replacement of older, less-efficient equipment.

See Appendix D for assumptions and full modeling results.

Source: Modeling conducted by EDAW in 2005 each of the four development areas of the project for each year in which it is assumed to occur. For this analysis it is assumed that construction activities would begin as early as May 2007 (on the Washington Street property) and extend through 2011 (on the River 2 and 3 areas).

Construction emissions would vary according to the stage of site development at each of the four development areas. Based on the analysis conducted, construction activity at each development area, individually and collectively, would generate maximum daily emissions of NO_X that would exceed the significance threshold of 82 lb/day during every year of the project's estimated construction period. The amount of this exceedance would vary according to the type of construction activity and whether construction activity is taking place at multiple development areas simultaneously. Although construction emissions of ROG at each individual development area would not exceed the threshold of 82 lb/day, construction activities are expected to take place at multiple development areas at the same time and their combined total would exceed the threshold. The combined total of PM_{10} generated by construction activity would not exceed the threshold of 150 lb/day. Nonetheless, fugitive dust emissions would potentially contribute to PM_{10} concentrations in the air basin that exceed NAAQS and CAAQS, thereby contributing to existing nonattainment conditions (state) for PM_{10} in the SVAB. This impact is considered **significant**.

Mitigation Measure 3.4-1: Implement Measures to Reduce Short-Term Construction Emissions of ROG, NO_X, and PM_{10}

In accordance with YSAQMD recommendations, the City shall require contractors to implement the following measures to reduce construction emissions (O'Brien, pers. comm., 2005):

(a) The project shall implement the following measures to reduce ROG, NO_X, and visible emissions from heavy-duty diesel equipment.

- The project applicants shall designate an on-site Air Quality Construction Mitigation Manager (AQCMM) who shall be responsible for directing compliance with mitigation measures for project construction.

- To the extent that equipment and technology are available and cost effective, the applicants shall encourage contractors to use catalyst and filtration technologies, and retrofit existing engines in construction equipment.

- All diesel-fueled engines used in the construction of the project shall use ultra-low-sulfur diesel fuel, which contains no more than 15 ppm sulfur or alternative fuels (e.g., reformulated fuels, emulsified fuels, compressed natural gas, or power with electrification). Low-sulfur diesel fuel (500 ppm sulfur content) shall be used only if evidence is obtained and maintained from the fuel supplier(s) that ultra-low-sulfur diesel fuel is infeasible.

- All construction diesel engines that have a rating of 50 horsepower (hp) or more shall meet, at a minimum, the Tier 2 California Emission Standards for Off-road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Section 2423(b)(1) unless certified by the on-site AQCMM that such an engine is not available for a particular item of equipment. In the event that a Tier 2 engine is not available for any off-road engine larger than 50 hp, that engine shall be a Tier 1 engine. If a Tier 1 engine is not available for any off-road engine larger than 50 hp, then that engine shall be a 1996 or newer engine. The AQCMM may grant relief from this requirement for an engine if compliance with this requirement is infeasible.

- To assist the AQCMM in identifying engines that comply with the above requirement over the period of project construction, all diesel-fueled engines used in the construction of the project shall have clearly visible tags issued by the AQCMM showing that the engine meets the above requirement.

- Idling time shall be minimized to 5 minutes when construction equipment is not in use, unless more time is required per engine manufacturer's specifications or for safety reasons.

- All heavy-duty equipment shall be maintained and operated according to manufacturers' specifications.

(b) In addition to the measures identified above, construction operations are required to comply with all applicable YSAQMD rules and regulations:

- YSAQMD Rule 2.3 requires controlling visible emissions so they do not exceed 40% opacity for more than 3 minutes in any 1 hour. This includes all (on-road and off-road) diesel-powered equipment.

- Any open burning that requires approval and issuance of a burn permit from YSAQMD shall be performed in accordance with YSAQMD Rule 2.8, "Open Burning, General."

- Architectural coatings and solvents used at the project shall comply with YSAQMD Rule 2.14, "Architectural Coatings."

- Cutback and emulsified asphalt application shall be conducted in accordance with YSAQMD Rule 2.28, "Cutback and Emulsified Asphalt Paving Materials."

- Portable equipment must meet either YSAQMD or statewide registration or permitting standards (Rules 3.1, 3.2 and 3.3 where applicable or California Health and Safety Code Section 41753.2[b]).

(c) As recommended by YSAQMD, the City shall require its construction contractor to reduce fugitive dust emission by implementing the measures listed in Tables 3.4-4 and 3.4-5 below.

Table 3.4-4
Best Available Fugitive Dust Control Measures

Fugitive Dust Source Category	Control Actions
Earthmoving	1. Maintain soil moisture content at a minimum of 12%, as determined by American Society for Testing and Materials (ASTM) method D-2216; two soil moisture evaluations must be conducted during the first 3 hours of active operations during a calendar day, and two such evaluations during each subsequent 4-hour period of active operations. For any earthmoving that is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Disturbed surface areas (except completed grading areas)	2a/b. Apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas that cannot be stabilized, as evidenced by wind-driven dust, must have an application of water at least twice per day to at least 80% of the unstabilized area.
Disturbed surface areas—completed grading areas	2c. Apply chemical stabilizers within 5 working days or grading completion; OR 2d. Take action 3a or 3c specified for inactive disturbed surface areas.
Inactive disturbed surface areas	3a. Apply water to at least 80% of all inactive disturbed surface areas on a daily basis when there is evidence of wind-driven fugitive dust, excluding any areas that are inaccessible because of excessive slope or other safety conditions; OR 3b. Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR 3c. Establish a vegetative ground cover within 21 days after active operations have ceased; ground cover must be of sufficient density to expose less than 30% of unstabilized ground within 90 days of planting, and at all times thereafter; OR 3d. Utilize any combination of control actions 3a, 3b, and 3c such that, in total, they apply to all inactive disturbed surface areas.
Unpaved roads	4a. Water all roads used for any vehicular traffic at least once during every 2 hours of active operations; OR 4b. Water all roads used for any vehicular traffic once daily and restrict vehicle speed to 15 mph; OR 4c. Apply chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.

Table 3.4-4 (continued) Best Available Fugitive Dust Control Measures	
Fugitive Dust Source Category	Control Actions
Open storage piles	5a. Apply chemical stabilizers; OR 5b. Apply water to at least 80% of the surface areas of all open storage piles on a daily basis when there is evidence of wind-driven fugitive dust; OR 5c. Install a three-sided enclosure with walls with no more than 50% porosity that extend, at a minimum, to the top of the pile.
Track-out control	6a. Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and width of at least 20 feet; OR 6b. Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.
All categories	7. Any other control measures approved by [YSAQMD] where necessary.
Source: South Coast Air Quality Management District Rule 403, as provided by O'Brien, pers. comm., 2005	

Table 3.4-5 Best Available Fugitive Dust Control Measures for High-Wind Conditions	
Fugitive Dust Source Category	Control Measures
Earthmoving	1A. Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	1B. On the last day of active operations before a weekend, holiday, or any other period when active operations will not occur for not more than 4 consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of 6 months; OR 2B. Apply chemical stabilizers before a wind event; OR
	3B. Apply water to all unstabilized disturbed areas three times per day; if there is any evidence of wind-driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR 4B. Take the actions specified in Table 1, Item 3c; OR 5B. Use any combination of control actions specified in Table 2, Items 2B, 3B, and 4B, such that, in total, they apply to all disturbed surfaced areas.
Unpaved roads	1C. Apply chemical stabilizers before a wind event; OR 2C. Apply water twice per hour during active operation.
Open storage piles	1D. Apply water twice per hour; OR 2D. Install temporary coverings.
Paved road track-out	1E. Cover all haul vehicles; OR 2E. Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for operation on both public and private roads.
All categories	1F. Any other control measures approved by [YSAQMD].
Note: High-wind conditions occurs when gusts exceed 25 mph. Source: South Coast Air Quality Management District Rule 403, Tables 1 and 2 (of 3), as provided by O'Brien, pers. comm., 2005	

Implementation of the control measures listed in Tables 3.4-4 and 3.4-5 would effectively reduce fugitive dust emissions (i.e., PM_{10}) by up to 75% and implementation of the other measures under Mitigation Measure 3.4-1 could reduce emissions of ROG and NO_X, from construction equipment by approximately 5%. Although the implementation of Mitigation Measure 3.4-1 would reduce fugitive dust emissions to a less-than-significant level, daily construction emissions of precursors to ozone (ROG and NO_X) would still exceed YSAQMD significance thresholds (Table 3.4-3), and thus would potentially result in or substantially contribute to pollutant concentrations that exceed the NAAQS and CAAQS. As a result, with implementation of this mitigation measure, Impact 3.4-1 would be **significant and unavoidable**.

IMPACT 3.4-2 **Air Quality – Long-Term Operational Project-Generated Emissions of ROG, NO_X, and PM_{10}.** *Long-term operation of the proposed project would result in emissions of ROG and NO_X that exceed YSAQMD thresholds. Furthermore, operational emissions from the proposed project would potentially conflict with or obstruct implementation of the applicable air quality plans. As a result, this impact is considered* ***significant****.*

Regional area- and mobile-source emissions of ROG, NO_X, and PM_{10} associated with the implementation of the proposed project were estimated using the URBEMIS 2002 Version 8.7 computer program, which is designed to model emissions for land use development projects. URBEMIS allows land use selections that include project location specifics and trip generation rates along with double-counting and pass-by trip options. URBEMIS accounts for area emissions from the usage of natural gas, hearth fuel combustion, landscape maintenance equipment, and consumer products; and mobile-source emissions associated with trip generation.

Regional mobile-source emissions were estimated based on trip generation rates presented in the transportation analysis (Section 3.3, "Transportation and Circulation") and default model settings for conditions in the SVAB in the year 2012, when the project would become completely operational. The trip generation rates provided by the traffic analysis are adjusted to account for trip reduction features of the project, including the incorporation of mixed uses, transit service facilities, and pedestrian and bicycle features. Based on the modeling conducted, the operation of the proposed project would result in unmitigated long-term regional emissions of approximately 152.32 lb/day of ROG, 162.04 lb/day of NO_X, and 105.50 lb/day of PM_{10} during the winter months, as summarized in Table 3.4-6. During the summer months, unmitigated long-term regional emissions would reach 151.52 lb/day of ROG, 113.10 lb/day of NO_X, and 105.34 lb/day of PM_{10}. It is important to note that project implementation would also result in emissions of CO. However, because CO disperses rapidly with increased distance from the source, emissions of CO are considered localized pollutants of concern rather than of regional concern and are analyzed separately under Impact 3.4-3. Because long-term regional emissions would exceed YSAQMD's recommended significance thresholds for ROG and NO_X (Table 3.4-6), this impact is considered **significant**.

Table 3.4-6
Summary of Predicted Long-Term Operational Emissions of ROG, NO_X, and PM_{10}

	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)
Summer			
Area source[1]	45.87	16.98	0.05
Mobile vehicle source[2]	105.65	96.12	105.30
Summer Total	151.52	113.10	105.34
Winter			
Area source[1]	45.00	18.99	0.20
Mobile vehicle source[2]	107.32	143.04	105.30
Winter Total	152.32	162.04	105.50
YSAQMD thresholds of significance	82	82	150

Table 3.4-6 (continued) Summary of Predicted Long-Term Operational Emissions of ROG, NO_X, and PM_{10}			
	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)

Note: See modeling results in Appendix D for further detail.

[1] The following emission values were changed from the default values provided by URBEMIS pursuant to guidance provided by the YSAQMD (O'Brien, pers. comm., 2005): The emission factor for ROG from architectural coatings was changed to 0.0013 pounds per square foot of surface area. The proportion of open hearth wood fireplaces was reduced from 10% to 0%, and the proportion of natural gas fireplaces was increased from 55% to 65%.

[2] Mobile-source emissions were estimated based on default model settings and trip generation rates obtained from the traffic analysis prepared for this project under buildout conditions. The trip generation rates provided by the traffic analysis are adjusted to account for trip reduction features of the project, including the incorporation of mixed uses, transit service facilities, and pedestrian and bicycle features.

Source: Modeling estimations provided by EDAW in 2005

Mitigation Measure 3.4-2: Implement Design and Operational Measures to Reduce Long-Term Operational Emissions of ROG and NO_X

The project applicants shall implement the following mitigation measures as part of the design of the proposed project and/or during project operation. It should be noted that some of these measures are already included in the proposed project design; however, they are repeated here to allow a complete listing of both design and operational measures.

- Coordinate with the City and the local transit service provider (Yolobus) to install appropriate transit-enhancing infrastructure on the project site, such as transit shelters, benches, street lighting, route signs and displays, and/or bus turnouts/bulbs.
- Pedestrian-enhancing infrastructure shall be provided that includes sidewalks and pedestrian paths.
- Bicycle-enhancing infrastructure shall be provided that includes bikeways/paths connecting to a bikeway system, secure bicycle parking, and bicycle storage areas at employment facilities and multifamily residential developments.
- Use solar, low-emission, central, or tankless water heaters (residential and commercial), and increase wall and attic insulation that meets or exceeds Title 24 requirements (residential and commercial).
- Install ozone destruction catalysts on air conditioning systems in consultation with YSAQMD.
- Orient buildings to take advantage of solar heating and natural cooling, and use passive solar designs (residential, commercial, and industrial).
- Plant deciduous trees on the south-facing and west-facing sides of buildings.

It is estimated that with implementation of Mitigation Measure 3.4-2, long-term regional emissions could be reduced slightly. Most of the design measures available to reduce operational emissions, such as planning high-density mixed uses within 0.25 mile of existing transit, are already incorporated into the project. A slight reduction, however, is not sufficient to reduce emission levels below the YSAQMD-recommended significance thresholds of 82 lb/day for ROG and 82 lb/day for NO_X. Thus, with implementation of this mitigation measure, Impact 3.4-2 would be **significant and unavoidable**.

IMPACT 3.4-3 **Air Quality – Increases in Local Mobile-Source CO Concentrations.** *Implementation of the proposed project would result in the generation of CO at nearby intersections from increased vehicular traffic on the local transportation network and at long vehicle queues at the Tower Bridge. However, the proposed project would not contribute to CO concentrations that exceed the CAAQS of 9.0 ppm for 8 hours or 20 ppm for 1 hour. Therefore, this impact is considered* ***less than significant.***

CO concentration is a direct function of vehicle idling time and, thus, traffic flow conditions. Under specific meteorological conditions, CO concentrations near congested roadways and/or intersections may reach unhealthy levels with respect to local sensitive land uses such as residential areas, schools, and hospitals. As a result, analysis of CO emissions is conducted at a local rather than a regional level.

The *Transportation Project-Level Carbon Monoxide Protocol* (Garza, Graney, and Sperling 1996) states that signalized intersections at LOS E or F represent a potential for a CO violation, also known as a “hot spot.” Thus, modeling of CO concentrations is typically recommended for receptors located near signalized roadway intersections that are projected to operate at LOS E or F.

According to the traffic analysis prepared for the proposed project (see Section 3.3, “Transportation and Circulation”), all but one of the signalized intersections in the immediate vicinity of the project site would be anticipated to operate at LOS D or better under existing plus project conditions (as shown in Tables 3.3-12 and 3.3-18). The intersection of Third Street and G Street in West Sacramento would operate at LOS E under existing plus project conditions; however, this is a stop sign intersection that would improve with the installation of a traffic signal, as required by Mitigation Measure 3.3-1.

Under future (cumulative) plus project conditions (Table 3.3-14), the signalized intersection of Third Street and Tower Bridge Gateway (State Route 275 [SR 275]) in West Sacramento would be anticipated to operate at LOS F, and mitigation is not available to improve operation of this intersection. In Sacramento, three signalized intersections would be anticipated to operate at an unacceptable LOS under future (cumulative) plus project conditions: Third Street and P Street (LOS E), Third Street and J Street (LOS F), and I Street and Jibboom Street (LOS E) (as shown in Table 3.3-19). The intersection of Third Street and P Street would improve to an acceptable level with mitigation (LOS D), as shown in Table 3.3-23, but mitigation is not available to improve the operation of the Third Street/J Street and I Street/Jibboom Street intersections.

High CO concentrations near all three unmitigable intersections would not be considered an impact because they are not located adjacent to sensitive receptors. The nearest sensitive receptors to the intersection of Third Street and Tower Bridge Gateway (presently called SR 275) in West Sacramento would be those proposed on the River 1 development area; however, these would be separated from the intersection by the triangle of land shaped by West Capitol Avenue, Third Street, and present SR 275. In Sacramento, the intersection of Third Street and J Street is surrounded by parking lots, and the intersection of I and Jibboom Streets in Sacramento is surrounded by the freeway, railroad tracks, and the Sacramento River. Furthermore, future overall vehicle fleets are anticipated to operate more efficiently with lower CO emissions because of anticipated technology improvements and regulatory controls. Thus, traffic generated by the proposed project is not anticipated to result in or contribute to CO concentrations that exceed the CAAQS of 9.0 ppm for 8 hours or 20 ppm for 1 hour.

Increased CO concentrations could also be generated by high volumes of vehicles idling in queue while waiting for the Tower Bridge to be drawn. The drawbridge is not operated according to any regular schedule but typically is opened multiple times each day. It is thus assumed that the maximum number of vehicles idling in queue before the bridge would occur during the commute hour. According to the traffic data prepared for this project, the highest volume of eastbound vehicles using the bridge would occur during the a.m. commute hour; this volume is anticipated to be 1,660 vehicles under existing plus project conditions. Assuming that all of these vehicles are waiting in the two lanes that approach the bridge, that each vehicle occupies approximately 20 feet of space, and that the bridge takes at most 10 minutes to be drawn and closed, the length of the two-lane queue could reach up to 2,767 feet. At this length, the queue of eastbound vehicles would not be close to any sensitive receptors. It is anticipated that most of the vehicles would be waiting on SR 275; some could potentially queue on South River Road and the connector from West Capitol Avenue.

The highest volume of westbound vehicles under existing plus project conditions would occur during the p.m. commute hour; this volume is anticipated to be 1,285 vehicles. This volume could result in a two-lane queue as long as 2,142 feet. At this length, the queue of westbound vehicles would not be located in close proximity to any sensitive receptors as they would mostly be waiting on the near portions of the I Street connector and Capitol Mall.

Therefore, the concentrations of CO on both sides of the bridge would not be expected to exceed the CAAQS of 9.0 ppm for 8 hours or 20 ppm for 1 hour because the duration of such an occurrence would last for no longer than 10 minutes. Furthermore, the localized concentrations of CO that would be generated near the bridge would not be in close proximity to any sensitive receptors. As a result, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.4-4	Air Quality – Exposure of Sensitive Receptors to Mobile-Source Toxic Air Contaminants. *Construction and/or operational activities related to development of Raley's Landing would require use of diesel-fueled equipment and vehicles. Regular localized use of diesel trucks in some commercial areas could generate levels of diesel PM emissions that would result in the exposure of sensitive receptors to TAC emissions that exceed 10 in 1 million for the MEI to contact cancer and/or a Hazard Index of 1 for the MEI. This impact is considered potentially significant.*

The exposure of sensitive receptors to toxic air emissions from short-term construction equipment, stationary sources, and on- and off-site mobile sources are discussed separately below. Emissions of TACs from accidental release of hazardous materials are discussed in Section 3.9, "Hazards and Hazardous Materials."

Short-Term Construction Mobile Sources. Construction of the project would result in diesel exhaust emissions from on-site heavy-duty equipment. Diesel PM was identified as a TAC by ARB in 1998. Construction of the project would generate diesel PM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the MEI. Thus, the risks estimated for an MEI are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (Salinas, pers. comm., 2004). Thus, the estimated 5-year duration of the proposed construction activities would only constitute approximately 7% of the total exposure period. Because the use of mobilized equipment would be temporary, diesel PM from construction activities would not be anticipated to result in the exposure of sensitive receptors to levels that exceed the applicable standards.

Long-Term Stationary Sources. No major stationary sources of toxics have been identified in the project area, such as a power plant, auto body shop, or large chemical storage facility. The project does, however, have the potential to locate dry cleaning facilities and/or gasoline stations among its proposed commercial/retail land uses. Perc is the solvent most commonly used by the dry cleaning industry to clean clothes and other materials, and inhalation of perc may result in both cancer and adverse noncancer health effects (ARB 2005d). Perc dry cleaners statewide are required to comply with ARB and local air district regulations to reduce emissions. However, even with these controls, some emissions continue to occur. Air quality studies indicate that there is still the potential for substantial risks even near well-controlled dry cleaners (ARB 2005d). These studies also indicate that the health risks from perc dry cleaners decrease rapidly as the distance from the facility increases (ARB 2005d). The California Air Pollution Control Officers Association is currently developing *Industry-wide Risk Assessment Guidelines for Perchloroethylene Dry Cleaners* which, when published, will provide detailed information on public health risk from exposure to emissions from this source (ARB 2005d).

Refueling at gasoline dispensing facilities releases benzene into the air. Benzene is a potent carcinogen and is one of the highest risk air pollutants regulated by ARB (ARB 2005d). Motor vehicles account for more than 90% of benzene emissions in California. Although gasoline-dispensing facilities account for a small part of total benzene emissions, near-source exposures for large facilities can be substantial. Benzene emissions from the largest gas stations may result in near-source health risk beyond the regional background and district health risk thresholds (ARB 2005d). Air quality modeling of the health risks from gasoline dispensing facilities indicate that the impact from such facilities decreases rapidly as the distance from the facility increases, and as the size (throughput, measured in gallons per year) of the facilities is decreased (ARB 2005d).

Given that the proposed project consists of mixed-use development, it could potentially locate a perc dry cleaner in the same building or in close proximity to a sensitive receptor (e.g., a day care center or residences). However, it is important to note that under YSAQMD Rules 3.1 ("General Permit Requirements"), 3.8 ("Federal Operating Permits"), and 3.13 ("Toxics New Source Review"), all stationary sources that have the potential to emit TACs are required to obtain permits from YSAQMD. Permits may be granted to these operations if they are located, constructed, and operated in accordance with applicable regulations. Given that compliance with applicable standards is required for the development and operation of land uses that may result in the emissions of TACs, toxic air emissions from stationary sources both within and adjacent to the project area would be anticipated to be within established standards. Nonetheless, applicable design guidelines from ARB's *Air Quality and Land Use Handbook* (ARB 2005d) are provided under Mitigation Measure 3.4-4 below.

Long-Term Off-Site Mobile Sources. The project site is not located within 1,000 feet of a rail yard and is more than 500 feet from Interstate 5. The busiest road near the project site is SR 275/Tower Bridge Gateway, which is located as close as 150 feet to the River 1 area. According to the traffic data prepared for this report, however, the traffic volume on this roadway is anticipated to be 23,200 vehicles per day in the year 2025, which is below the guidance parameter recommended by ARB (ARB 2005d). Therefore, toxic air emissions from off-site mobile sources would be anticipated to be within established standards.

Long-Term Operation of On-Site Mobile Sources. Operational activities that require the use of diesel-fueled vehicles for extended periods, such as commercial trucking facilities or delivery/distribution areas, may generate diesel PM emissions that could exceed applicable standards. Although the specific commercial and retail uses that would be developed under the project have not been identified, the project could include commercial uses that require large delivery and shipping trucks that operate on diesel fuel. The diesel PM emissions generated by these uses would be generated primarily at single locations on a regular basis. Idling trucks, including trucks with transport refrigeration units, would increase diesel PM levels at these locations. Diesel PM emissions may be blown to nearby sensitive receptors, including proposed nearby residential units. It is unknown at this time whether the concentration of diesel PM at any sensitive receptor locations might exceed the threshold for acceptable cancer risk for the MEI. It is also unclear what effect ARB's new diesel engine emission standards and diesel PM regulations would have on the level of emissions from any one facility. As a result, this impact is considered **potentially significant**.

Mitigation Measure 3.4-4: Implement Design and Operational Measures to Reduce Long-Term Exposure to TACs

The City shall ensure the following measures are included in the design and operation of the project:

- Proposed commercial/convenience land uses (e.g., loading docks) that have the potential to emit toxic air emissions shall be located as far away as feasibly possible from existing and proposed sensitive receptors in accordance with ARB's *Air Quality and Land Use Handbook* (ARB 2005d).

- Air intakes associated with the heating and cooling system for office and residential buildings shall not be located next to potential TAC-emitting locations (e.g., loading docks) in accordance with ARB's *Air Quality and Land Use Handbook* (ARB 2005d).

- The owners/tenants and operators of the proposed facilities that would host the long-term use of diesel equipment and heavy-duty trucks shall develop and implement a plan to reduce emissions, which may include such measures as scheduling such activities when nearby residential uses are the least occupied, requiring equipment to be shut off when not in use, and prohibiting heavy-trucks from idling. The plan shall be submitted to the City for review and approval before facilities that would host long-term use of diesel equipment are occupied.

- Permits shall be obtained from the YSAQMD for any diesel-powered backup generators that would be used on the project site.

The following additional guidelines are recommended in ARB's *Air Quality and Land Use Handbook* (ARB 2005d) and are considered to be advisory and not regulatory:

- Sensitive receptors, such as residential units and day care centers, shall not be located in the same building as dry cleaning operations that use perchloroethylene. Dry cleaning operations that use perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines.

With implementation of this mitigation measure, the exposure of sensitive receptors to mobile-source TACS is anticipated to be below the existing acceptable threshold; therefore, this impact would be reduced to **less than significant**.

3.5 NOISE AND VIBRATION

This section includes a summary of applicable regulations, a description of existing noise conditions, and an analysis of potential short-term construction and long-term operational source noise impacts of the proposed project. Mitigation measures are recommended, as necessary, to reduce significant noise impacts.

3.5.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Noise

No federal plans, policies, regulations, or laws concerning airborne noise are applicable to the proposed project.

Groundborne Vibration

Two separate sets of impact standards have been established by federal entities for groundborne noise and vibration. First, to address the human response to groundborne vibration the Federal Transit Administration (FTA) has set forth the following maximum acceptable vibration criteria for different types of land uses (FTA 1995):

- 65 vibration decibels (VdB) for land uses where low ambient vibration is essential for interior operations (such as hospitals and high-tech manufacturing or laboratory facilities),
- 80 VdB for residential uses and buildings where people normally sleep, and
- 83 VdB for institutional land uses with primarily daytime operations (such as schools, churches, clinics, and offices).

Standards have also been established to address the potential for groundborne vibration to cause structural damage to buildings. These standards were developed by the Committee of Hearing, Bio-Acoustics, and Bio-Mechanics (CHABA) at the request of the EPA (FTA 1995). For fragile structures, CHABA recommends a maximum of 0.25 inch per second (in/sec) peak particle velocity (PPV) (FTA 1995).

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Noise

Title 24 of the California Code of Regulations establishes standards governing interior noise levels that apply to all new residential units in California. These standards require that acoustical studies be performed before construction at building locations where the existing day-night noise level (L_{dn}) exceeds 60 A-weighted decibels (dBA). Such acoustical studies are required to establish mitigation measures that will limit maximum L_{dn} levels to 45 dBA in any habitable room. Although there are no generally applicable interior noise standards pertinent to all uses, many communities in California have adopted an L_{dn} of 45 dBA as an upper limit on interior noise in all residential units.

In addition, the State of California has developed land use compatibility guidelines for community noise environments. The *State of California General Plan Guidelines*, published by the Governor’s Office of Planning and Research (OPR) (Governor’s Office of Planning and Research 2003), provides guidance for the acceptability of projects within specific community noise equivalent level (CNEL)/L_{dn} contours. Table 3.5-1 presents acceptable and unacceptable community noise exposure limits for various land use categories. Generally, residential uses are considered to be acceptable in areas where exterior noise levels do not exceed 60 dBA CNEL/L_{dn}. Residential uses are normally unacceptable in areas exceeding 70 dBA L_{dn} and conditionally acceptable within 55–70 dBA L_{dn}. Schools are normally acceptable in areas up to 70 dBA CNEL and normally unacceptable in areas exceeding 70 dBA CNEL. Commercial uses are normally acceptable in areas up to 70 dBA CNEL. Between 67.5 and 77.5 dBA CNEL, commercial uses are conditionally acceptable, depending on the noise insulation features and the noise reduction requirements. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

Table 3.5-1
State Land Use Noise Compatibility Guidelines

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable[a]	Conditionally Acceptable[b]	Normally Unacceptable[c]	Clearly Unacceptable[d]
Residential—Low-Density Single-Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential—Multifamily	<65	60–70	70–75	75+
Transient Lodging—Motel, Hotel	<65	60–70	70–80	80+
Schools, Libraries, Churches, Hospitals, Nursing Homes	<70	60–70	70–80	80+
Auditoriums, Concert Halls, Amphitheaters	—	<70	65+	—
Sports Arena, Outdoor Spectator Sports	—	<75	70+	—
Playgrounds, Neighborhood Parks	<70	—	67.5–75	72.5+
Golf Courses, Riding Stables, Water Recreation, Cemeteries	<75	—	70–80	80+
Office Building, Business Commercial and Professional	<70	67.5–77.5	75+	—
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	—

[a] Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
[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 are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
[c] New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.
[d] New construction or development should generally not be undertaken.

Source: Governor's Office of Planning and Research 2003

Groundborne Vibration

For the protection of fragile, historic, and residential structures, the California Department of Transportation (Caltrans) recommends a threshold of 0.2 in/sec PPV for normal residential buildings and 0.08 in/sec PPV for old or historically significant structures (Caltrans 2002a). These standards are more stringent than the federal standard established by CHABA, presented above.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of West Sacramento General Plan

The following policies from the Health and Safety Element of the *City of West Sacramento General Plan* (General Plan) pertain to noise and are relevant to the proposed project:

- **Policy E.1:** New development of uses contained in Table [3.5-2a] shall not be allowed where the noise level because of non-transportation noise sources will exceed the noise level standards of Table [3.5-2a] as measured immediately within the property line of the new development. Where the land uses contained in Table [3.5-2a] are proposed in areas exposed to existing or projected exterior non-transportation noise levels exceeding the performance standards in Table [3.5-2a], an acoustical analysis shall be required, and appropriate noise mitigation shall be included in the project design.

- **Policy E.2:** Where proposed non-residential uses are likely to produce noise levels exceeding the performance standards of Table [3.5-2a], an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. The requirements for the content of an acoustical analysis are given in Table [3.5-2b]. Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table [3.5-2b] as measured immediately within the property line of land uses designated for in Table [3.5-2a].

- **Policy E.3:** The feasibility of proposed projects with respect to existing and future transportation noise levels shall be evaluated by comparison to Figure II-1. [Refer to City of West Sacramento General Plan for figure. Including this figure in this EIR is unnecessary because the noise feasibility levels are not used as significance thresholds.]

- **Policy E.4:** New development of land uses contained in Table [3.5-2c] will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table [3.5-2c]. Where the land uses contained in Table [3.5-2c] are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table [3.5-2c] an acoustical analysis shall be required and appropriate mitigation shall be included in the project design.

- **Policy E.5:** Noise created by new transportation noise sources (other than roadway improvement projects) shall be mitigated so as not to exceed the levels specified in Table [3.5-2c] at outdoor activity areas or interior spaces of the existing uses.

- **Policy E.6:** It is anticipated that roadway improvement projects will be required to accommodate build-out of the General Plan. The General Plan EIR acknowledges that existing uses may be exposed to increased roadway capacity and increases in travel speeds. It may not be practical to reduce traffic noise levels because of roadway improvement projects to achieve the standards in Table [3.5-2c]. However, practical noise mitigation measures should be applied where significant noise impacts result from roadway improvement projects:

    a. Where existing or projected future traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of residential uses, increase of over 5 dB L_{dn} because of a roadway improvement project will be considered significant; and

    b. Where existing or projected future traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of residential uses, an increase of over 3 dB L_{dn} because of a roadway improvement project will be considered significant; and

c. Where existing or projected future traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of residential uses, an increase of over 1.5 dB L_{dn} because of a roadway improvement project will be considered significant.

- **Policy E.7:** Where noise mitigation measures are required to achieve the standards of Tables [3.5-2a] and [3.5-2c], the emphasis of such measures shall be placed upon the site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

For purposes of the Health and Safety Element, transportation noise sources are defined as traffic on public roadways, railroad line operations, and aircraft in flight. Nontransportation noise sources may include industrial operations; outdoor recreation facilities; heating, ventilation, and air conditioning (HVAC) units; loading docks; and construction equipment.

Table 3.5-2a
City of West Sacramento Municipal Code
Noise Level Performance Standards for New Projects Affected by or Including Nontransportation Noise Sources

Land Use	Noise Level Descriptor	Exterior Noise Levels		Interior Noise Levels	
		Daytime (7 a.m.- 10 p.m.)	Nighttime (10 p.m.- 7 a.m.)	Daytime (7 a.m.- 10 p.m.)	Nighttime (10 p.m.- 7 a.m.)
Residential	Hourly L_{eq}, dBA	50	45	45	35
	Maximum Level, dBA	70	65	—	—
Transient Lodging	Hourly L_{eq}, dBA	—	—	45	35
Hospitals, Nursing Homes	Hourly L_{eq}, dBA	—	—	45	35
Theaters, Auditoriums, Music Halls	Hourly L_{eq}, dBA	—	—	35	35
Churches, Meeting Halls	Hourly L_{eq}, dBA	—	—	40	40
Office Buildings	Hourly L_{eq}, dBA	—	—	45	45
Schools, Libraries, Museums	Hourly L_{eq}, dBA	—	—	45	45

Note: L_{eq} = equivalent noise level.
Each of the noise levels specified above shall be lowered by 5 dBA for simple tones, noises consisting primarily of speech or music, or recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).
Source: City of West Sacramento 2004

City of West Sacramento Noise Ordinance

The City of West Sacramento Municipal Code contains performance standards intended to prevent any use that may create dangerous, injurious, noxious, or otherwise objectionable conditions. The code includes noise standards for transportation and nontransportation sources that are repeated in Tables 3.5-2a and 3.5-2c.

As indicated in footnote number 3 of Table 3.5-2c, the City's exterior noise standard for transportation noise sources in the Washington Specific Plan area is 70 dBA CNEL/L_{dn}. According to the City, practical application of the best available noise reduction measures is required to mitigate transportation noise in the Washington Specific Plan area only if, without mitigation, transportation noise sources generate exterior noise levels that exceed 70 dBA CNEL/L_{dn} and/or interior noise levels that exceed the applicable interior standards in Table 3.5-2c (Bermudez, pers. comm., 2005).

Table 3.5-2b
City of West Sacramento Municipal Code Requirements for an Acoustical Analysis

An acoustical analysis prepared pursuant to the Noise Element shall:

A. Be the financial responsibility of the applicant.

B. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.

C. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources.

D. Estimate existing and projected cumulative (20 years) noise in terms of L_{dn}/CNEL and/or standards of Tables [3.5-2a and 3.5-2c], and compare those levels to the adopted policies of the Noise Element.

E. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element, giving preference to proper site planning and design over mitigation measures which require the construction of noise barriers or structural modifications to buildings which may be considered to contain noise-sensitive land uses. Where the noise source in question consists of intermittent single events, the repot must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.

F. Estimate noise exposure after the prescribed mitigation measures have been implemented.

G. Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.

Source: City of West Sacramento 2004

Table 3.5-2c
City of West Sacramento Municipal Code Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] CNEL/L_{dn}, dBA	Interior Spaces	
		CNEL/L_{dn}, dBA	L_{eq},dBA[2]
Residential	60 [3]	45	—
Transient Lodging	60 [3]	45	—
Hospitals, Nursing Homes	60 [3]	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Meeting Halls	60 [3]	—	40
Office Buildings	—	—	45
Schools, Libraries, Museums	—	—	45
Playgrounds, Neighborhood Parks	70	—	—

[1] Where the location of outdoor activity is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

[2] As determined for a typical worst-case hour during period of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dBA CNEL/L_{dn} or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dBA CNEL/L_{dn} may be allowed, provided that practical exterior noise level reduction measures have been implemented and that interior noise levels are in compliance with this table. An exterior noise level of 70 dB CNEL/L_{dn} shall be allowed in the Triangle Specific Plan Area and the Washington Specific Plan Area.

Source: City of West Sacramento 2005.

Washington Specific Plan

There are no policies in the *Washington Specific Plan* that are relevant to noise or vibration issues in the project area.

3.5.2 ACOUSTIC FUNDAMENTALS

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound, as described in more detail below, is mechanical energy transmitted in the form of a wave because of a disturbance or vibration.

SOUND PROPERTIES

A sound wave is introduced into a medium (air) by a vibrating object. The vibrating object (e.g., the vocal cords, the string and sound board of a guitar, or the diaphragm of a radio speaker) is the source of the disturbance that moves through the medium. Regardless of the type of source creating the sound wave, the particles of the medium through which the sound moves are vibrating in a back-and-forth motion at a given frequency (pitch). The frequency of a wave refers to how often the particles vibrate when a wave passes through the medium. The frequency of a wave is measured as the number of complete back-and-forth vibrations of a particle per unit of time. If a particle of air undergoes 1,000 longitudinal vibrations in 2 seconds, then the frequency of the wave will be 500 vibrations per second. A commonly used unit for frequency is hertz (Hz), with one Hz equaling one vibration per second.

Each particle vibrates because of the motion of its nearest neighbor. The first particle of the medium begins vibrating at, say, 500 Hz, and sets the second particle of the medium into motion at the same frequency (500 Hz). The second particle begins vibrating at 500 Hz and thus sets the third particle into motion at 500 Hz. The process continues throughout the medium, and hence each particle vibrates at the same frequency. Subsequently, a guitar string vibrating at 500 Hz will set the air particles in the room vibrating at the same frequency, thus carrying a sound wave with a frequency of 500 Hz to the detector.

The back-and-forth vibration motion of the particles of the medium is not the only observable phenomenon occurring at a given frequency. Because a sound wave is a pressure wave, oscillations in pressure from high to low and back to high are also observable. Compression (high-pressure) and rarefaction (low-pressure) disturbances moving through a medium will reach the detector at a given frequency. For example, a compression will reach the detector 500 times per second if the frequency of the wave is 500 Hz. Similarly, a rarefaction will reach the detector 500 times per second if the frequency of the wave is 500 Hz. Thus, the frequency of a sound wave refers not only to the number of back-and-forth vibrations of the particles per unit of time but also to the number of compression or rarefaction disturbances that pass a given point per unit of time. The frequency of these pressure oscillations over a given period of time can also be measured with a detector. The period of the sound wave can be found by measuring the time between successive high-pressure points (corresponding to the compressions) or the time between successive low-pressure points (corresponding to the rarefactions). The frequency is simply the reciprocal of the period; thus, an inverse relationship exists, so that as frequency increases the period decreases.

A wave is an energy transport phenomenon that transports energy along a medium. The amount of energy carried by a wave is related to the amplitude (loudness) of the wave. A high-energy wave is characterized by high amplitude, and a low-energy wave by low amplitude. The amplitude of a wave refers to the maximum amount of displacement of a particle from its rest position. The energy transported by a wave is directly proportional to the square of the amplitude of the wave. This means that a doubling of the amplitude of a wave is indicative of a quadrupling of the energy transported by the wave.

SOUND AND THE HUMAN EAR

Because of the ability of the human ear to detect a wide range of sound pressure fluctuations, sound pressure levels are expressed in logarithmic units called decibels (dB). Because the human ear is not equally sensitive to all sound frequencies, a specific frequency-dependent rating scale was devised to relate noise to human sensitivity. A dBA scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. The basis for compensation is the faintest sound audible to the average ear at the frequency of maximum sensitivity. This dBA scale has been chosen by most authorities for the purpose of regulating environmental noise. Typical indoor and outdoor noise levels are presented in Exhibit 3.5-1.

The combined sound level resulting from multiple sources is the sum of the sound levels from individual sources on a logarithmic scale. For instance, a 65 dBA source of sound, such as a truck, when joined by another 65 dBA source results in a sound amplitude of 68 dBA, not 130 dBA (i.e., doubling the source strength increases the sound pressure [which is different from the perceived noise level discussed below] by 3 dBA).

With respect to how humans perceive increases in noise levels, a 1 dBA increase is imperceptible, a 3 dBA increase is barely perceptible, a 6 dBA increase is clearly perceptible, and a 10 dBA increase is subjectively perceived as approximately twice as loud (Egan 1988). For this reason, an increase of 3 dBA or more is generally considered a degradation of the existing noise environment.

SOUND PROPAGATION

As sound (noise) propagates from the source to the receptor, the attenuation, or manner of noise reduction in relation to distance, is dependent on surface characteristics, atmospheric conditions, and the presence of barriers. The inverse square law describes the attenuation because of the pattern in which sound travels from the source to receptor. Sound travels uniformly outward from a point source in a spherical pattern with an attenuation rate of 6 dBA per doubling of distance (dBA/DD). However, from a line source (e.g., a road) sound travels uniformly outward in a cylindrical pattern with an attenuation rate of 3 dBA/DD. The surface characteristics between the source and receptor may result in additional sound absorption and/or reflection. Atmospheric conditions such as wind speed, temperature, and humidity may affect noise levels. Furthermore, the presence of a barrier between the source and receptor may also attenuate noise levels. The actual amount of attenuation is dependent upon the barrier size and frequency of the noise. A noise barrier may be any natural or artificial feature such as a hill, tree, building, wall, or berm (Caltrans 1998). All buildings provide some exterior-to-interior noise reduction. A building constructed with a wood frame and a stucco or wood sheathing exterior typically provides an exterior-to-interior noise reduction of 25–30 dBA with its windows closed, whereas a building constructed of a steel or concrete frame, a curtain wall or masonry exterior wall, and fixed plate glass windows of one-quarter-inch thickness typically provides an exterior-to-interior noise reduction of 30–40 dBA with its windows closed (Paul S. Veneklasen & Associates 1973, cited in Caltrans 2002b).

NOISE DESCRIPTORS

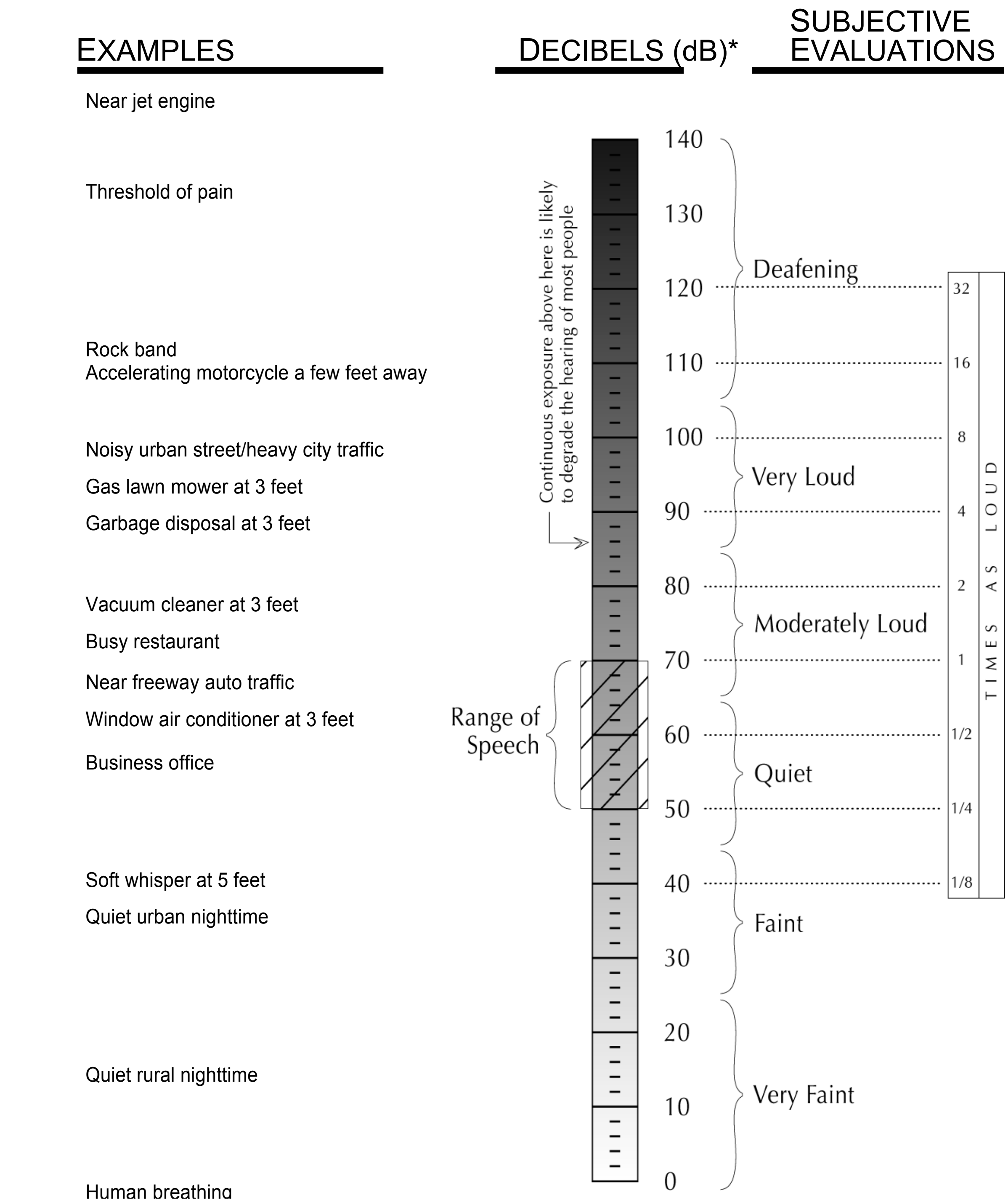
The selection of a proper noise descriptor for a specific source is dependent upon the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise are defined below (Caltrans 1998, Lipscomb and Taylor 1978).

- L_{min} (minimum noise level): The minimum instantaneous noise level during a specific period of time.

- L_{max} (maximum noise level): The maximum instantaneous noise level during a specific period of time. The L_{max} may also be referred to as the “peak (noise) level.”

- L_X (statistical descriptor): The noise level exceeded X% of a specific period of time.

- L_{eq} (equivalent noise level): The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the L_{eq}.



* dB are "average" values as measured on the A-scale of a sound-level meter.
From *Concepts in Architectural Acoustics* (M. David Egan, McGraw Hill, 1988) and *The Noise Guidebook* (U.S. Department of Housing and Urban Development, Office of Community Planning and Development, undated).

Source: EDAW 2003

Typical Noise Levels **Exhibit 3.5-1**

- L_{dn} (day-night noise level): The 24-hour L_{eq} with a 10 dBA "penalty" for the noise-sensitive hours between 10 p.m. and 7 a.m. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.

- CNEL (community noise equivalent level): A noise level similar to the L_{dn} described above, but with an additional 4.77 dBA "penalty" for the noise-sensitive hours between 7 p.m. and 10 p.m., which are typically reserved for relaxation, conversation, reading, and television. If using the same 24-hour noise data, the CNEL is typically approximately 0.5 dBA higher than the L_{dn}.

- SEL (single-event [impulsive] noise level): A description of a receiver's cumulative noise exposure from a single impulsive-noise event, which is defined as an acoustical event of short duration and which involves a change in sound pressure above some reference value.

NEGATIVE EFFECTS OF NOISE ON HUMANS

Negative effects of noise exposure include physical damage to the human auditory system, interference, and disease. Exposure to noise may result in physical damage to the auditory system, which may lead to gradual or traumatic hearing loss. Gradual hearing loss is because of sustained exposure to moderately high noise levels over a period of time, while traumatic hearing loss is caused by sudden exposure to extremely high noise levels over a short period. However, gradual and traumatic hearing loss both may result in permanent hearing damage. In addition, noise may interfere with or interrupt sleep, relaxation, recreation, and communication. Although most interference may be classified as annoying, the inability to hear a warning signal may be considered dangerous. Noise may also be a contributor to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to such diseases depends on the noise frequency, bandwidth, level, and exposure time (Caltrans 1998).

EFFECTS OF GROUNDBORNE VIBRATION ON HUMANS

Groundborne vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. Sources of groundborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or artificial causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous such as factory machinery, and transient, such as explosions. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency.

Vibration amplitudes are usually expressed in PPV or root mean squared (RMS), as in RMS vibration velocity. In the United States, the PPV and RMS velocity are normally described in in/sec. "PPV" is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (FTA 1995, Caltrans 2002a).

Although PPV is appropriate for evaluating the potential of building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation, expressed as VdB, which serves to compress the range of numbers required to describe vibration (FTA 1995).

The background vibration velocity level in residential areas is usually approximately 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 1995).

Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration is rarely perceptible. The VdB range of interest in assessing the effects of groundborne vibration is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Construction activities can generate groundborne vibrations, which can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 1995).

Construction vibrations can either be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, and compressors. Random vibration can result from jack hammers, pavement breakers, and heavy construction equipment. Table 3.5-3 describes the general human response to different levels of groundborne vibration velocity levels.

Table 3.5-3
Human Response to Different Levels of Groundborne Noise and Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Source: FTA 1995

3.5.3 EXISTING CONDITIONS

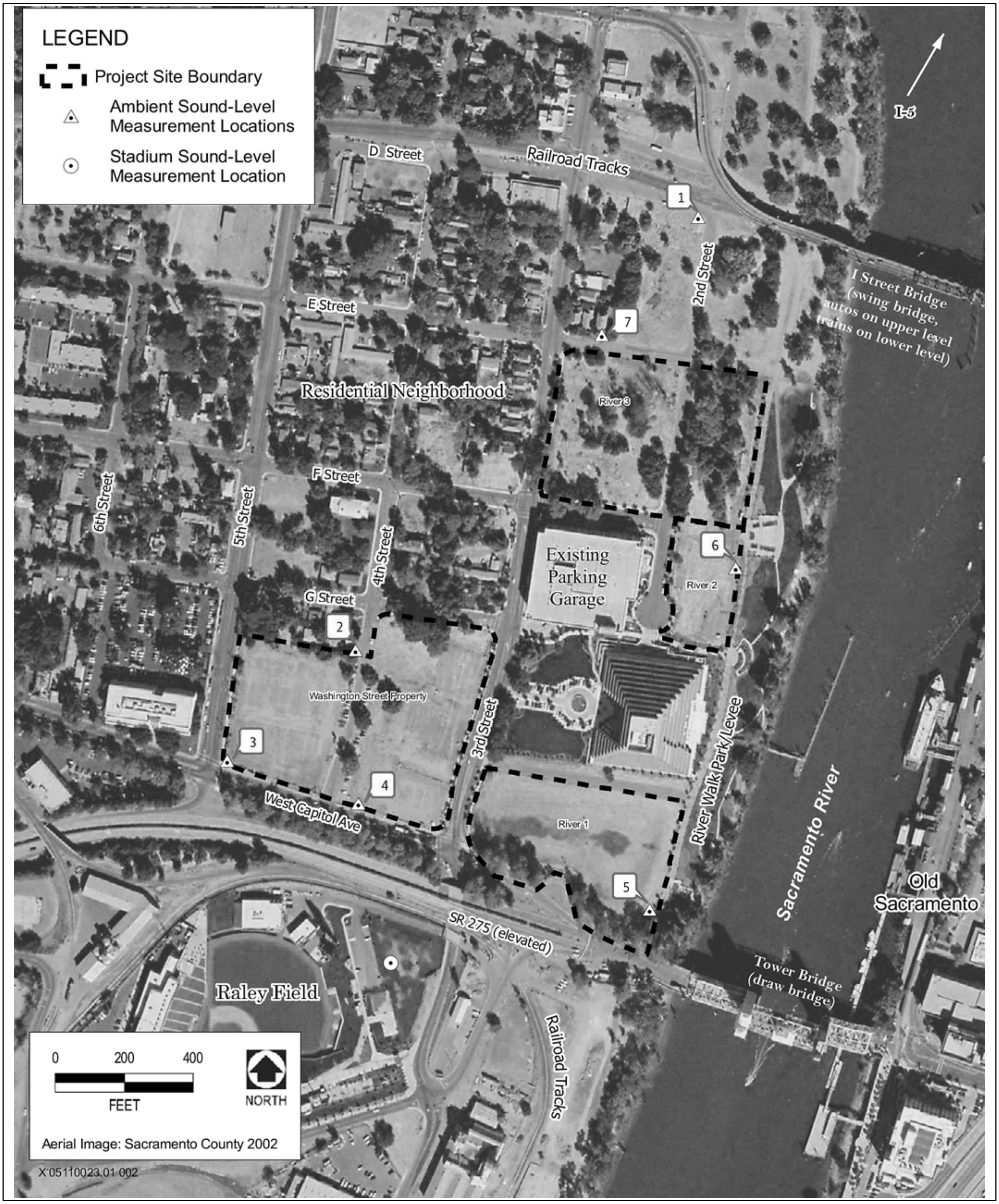
EXISTING NOISE-SENSITIVE LAND USES

Noise-sensitive land uses generally include those uses where exposure to noise would result in adverse effects, as well as uses where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other noise-sensitive land uses include hospitals, convalescent facilities, parks, hotels, churches, libraries, and other uses where low interior noise levels are essential.

The area in the vicinity of the project site contains residential, office commercial, and retail commercial land uses. Noise-sensitive land uses located in the vicinity of the project site consist primarily of single-family residential dwellings. As shown in Exhibit 3.5-2, residential neighborhoods are located west of the project site and several single-family residences are adjacent to the parcels that would be developed by the project. Two residences are located adjacent to the Washington Street property on the west side of Fourth Street. There are also several residences located across the street from the River 3 area, seven residences on the west side of Third Street, and three residences on the north side of E Street.

EXISTING NOISE SOURCES

The existing noise environment within the project area is influenced primarily by surface transportation noise emanating from vehicular traffic on area roadways and railway activity, as well as stadium noise during baseball games and special events at Raley Field. These sources are discussed separately below.



Source: EDAW 2005

Sound-Level Measurement Locations **Exhibit 3.5-2**

Traffic on Local Roads

As stated above, one of the dominant noise sources in the vicinity of the project area is vehicular traffic on area roadways. Existing roadway traffic noise levels were calculated for area roads using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA 1988) and traffic data obtained from the traffic analysis prepared for this project. Additional input data included day/night percentages of autos, medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths.

Table 3.5-4 presents the estimated CNEL/L_{dn} noise levels at 50 feet from the centerline of the near travel lane and the distances from the roadway centerline to the 55, 60, 65, and 70 dBA CNEL/L_{dn} contours for existing average daily traffic volumes. Note that the existing traffic noise level along some of the modeled roadways already exceeds the City's 60 dbA CNEL/L_{dn} standard for sensitive receptors (Table 3.5-2c).

Table 3.5-4
Estimated Existing Vehicular Traffic Noise Levels

Roadway Segment and Location	Distance (ft) from Roadway Centerline to CNEL/L_{dn} (dBA) [1]				CNEL/L_{dn} (dBA) 50 Feet from Centerline of Near Travel Lane [1]
	70 CNEL	65 CNEL	60 CNEL	55 CNEL	
F Street west of Eighth Street	—	—	—	63.9	55.42
Third Street between G Street and West Capitol Avenue	—	—	63.7	130.6	59.11
Fourth Street between F Street and E Street	—	—	—	—	44.28
Fifth Street between F Street and E Street	—	—	71.3	146.6	59.73
Fifth Street between G Street and West Capitol Avenue	—	—	78.4	162.9	60.49
Fourth Street between G Street and West Capitol Avenue	—	—	—	—	45.38
F Street between Fifth Street and Sixth Street	—	—	—	60.9	54.99
West Capitol Avenue west of Fifth Street	—	—	100.8	215.2	62.96
Third Street between F Street and E Street	—	—	—	93.1	57.79
G Street between Fifth Street and Sixth Street	—	—	—	—	46.74
SR 275 between Third Street and Fifth Street [2]	103.7	216.6	463.3	996.6	72.02

Note: SR 275 = State Route 275.
[1] Traffic noise levels and contour distances were calculated using the FHWA Noise Prediction Model based on traffic volumes obtained from the traffic report prepared for this project. Calculated noise levels do not consider any shielding or reflection of noise by existing structures or terrain features or noise contribution from other sources. See modeling results in Appendix E for further detail.
[2] Traffic on SR 275 (i.e., vehicles approaching and departing the Tower Bridge) is the dominant noise source in the River 1 area and at the Washington Street property. From east to west, this portion of the road is approximately 20 feet high where it connects with the Tower Bridge and gradually descends to ground level near the on-ramp at Fifth Street. Mature trees also obstruct the line of sight from the River 1 area to most of SR 275. These factors are not reflected in the estimated noise levels and contour distances.
Source: Modeling performed by EDAW in 2005

In addition, traffic from Interstate 5 (I-5)/State Route 99 (SR 99) located on the opposite side of the Sacramento River, can be heard from the northeast portion of the River 1 and River 3 areas, although there is no direct line of sight at ground level. The freeway is as close as 1,200 feet to the southeast corner of the River 1 area. The existing traffic volume on this segment of I-5/SR 99 is approximately 176,000 average trips per day (Caltrans 2005). Using the FHWA Traffic Noise Prediction Model (FHWA 1988), the existing level of freeway noise at the project site, at ground level and assuming no intervening barriers or topographical features, is estimated to be 63.3 dBA CNEL/L_{dn}. The actual level of freeway noise at the project site is lower because of intervening buildings in Old Sacramento and the levees along the river.

Railroad Traffic

Freight and passenger trains are the dominant noise source in the River 3 area when they are passing on the Union Pacific Railroad tracks (formerly operated by the Southern Pacific Railroad) parallel to and just north of D Street. Approximately 41 trains (freight and passenger) pass along these tracks each day at an average speed of about 30 mph (Lund, pers. comm., 2005). Noise from passing trains is generated by diesel engines, warning horns, and gate bells at railroad crossings. Other components of noise include diesel exhaust, cooling fans, and wheel/rail interaction. The nearest railroad crossing is across Third Street, just north of D Street, which is one block north of the northwest corner of the River 3 area.

Guidance provided in the FTA's *Transit Noise and Vibration Impact Assessment* (FTA 1995) was used for the calculation of wayside noise levels generated by trains traveling along this line, excluding horn noise. The northeast portion of the River 3 area is the closest portion of the project site to the railroad tracks, at a distance of approximately 400 feet and with a direct line of sight to passing trains. At this distance, wayside noise levels are estimated to be 52 dBA CNEL/L_{dn}, excluding noise from train horns. The noise levels during both daytime and nighttime hours are estimated to be approximately 46 dBA L_{eq}.

The River 3 area is also exposed to noise from train horns as they approach this railroad crossing. When sound-level measurements were collected at the project site (see discussion below), the loudest train horn noise recorded was 77.9 dBA L_{max} at a distance of 500 feet from the railroad tracks. The Federal Railway Administration's Horn Noise Assessment Model was used to estimate the average daily noise level generated by train horns (Federal Railway Administration 2003). According to the model, the 65 dBA CNEL/L_{dn} contour for train horn noise would extend 200 feet from the tracks. Along the closest side of the River 3 area, 400 feet from the tracks, the noise level of train horns would be 59 dBA CNEL/L_{dn}. This estimate is based on the point source attenuation rate of 6 dBA/DD because a train horn is a single source that is located at one point at any single moment in time, as opposed to a line source that consists of multiple point sources moving about a line simultaneously and radiating sound cylindrically.

The combined noise level of a passing train, including its train horn, would be 59.8 dBA CNEL/L_{dn}.

Trains also operate on the Union Pacific Railroad line located south of SR 275 near Raley Field. Rail horns can be heard from trains on this line; however, rail activity at this location is not considered a dominant noise source that contributes to the noise environment at the project site because the intervening segment of SR 275 is elevated and prevents a direct line of sight from the project site to this rail line. Moreover, most rail noise cannot be heard over traffic noise generated on SR 275. Noise is also generated by a steam engine locomotive, especially the train's whistle, operated from Old Sacramento, across the river from the project site. Operations of this steam engine locomotive occur only during daytime hours.

Stadium Noise

At the time of its proposal, a noise study of the baseball stadium now called Raley Field was prepared for the City (Paoletti Associates 1998). The study, which addressed whether stadium noise would be compatible with surrounding land uses, was primarily based on projected day-night noise levels (i.e., L_{dn}) and did not address hourly L_{eq} noise levels or maximum noise levels (i.e., L_{max}) during game times. Noise monitoring was conducted during a River Cats baseball game for this analysis of the Raley's Landing project because a more accurate assessment of noise generated at the stadium during game times is possible now that the stadium is built and fully operational.

a site visit conducted by an EDAW noise specialist during a Sacramento River Cats baseball game on Friday, July 1, 2005, EDAW staff confirmed that noise generated at Raley Field is audible on the project site. Raley Field is located south of the project site across SR 275 and is oriented such that its open end faces both the Washington Street property, approximately 425 feet to the north, and the River 1 area, approximately 550 feet to the northeast. The Sacramento River Cats play minor league opponents in the stadium approximately 70 days out of the year from April 1 through early September. Most home games are played in the evening, typically starting at 7:05 p.m. and ending before 10 p.m. Home games on Saturday evenings include a fireworks show at the end of the game that lasts approximately 8 minutes.

EDAW collected sound-level measurements outside the stadium during an evening game on Saturday, July 2, 2005. A Larson Davis model 820 sound-level meter was located in the picnic area of the stadium complex, approximately 200 feet northeast of the center field wall, to record the average sound level of noise generated predominantly by the game (Exhibit 3.5-2). The sound-level measurements were taken in accordance with the American National Standards Institute (ANSI) acoustic standards. Hourly average sound levels recorded during the game (hourly L_{eq}) ranged from 61.8 dBA L_{eq} to 65.9 dBA L_{eq} and increased steadily as the game progressed. It is assumed that even higher sound levels are generated during music concerts taking place in the stadium (Paoletti Associates 1998). Maximum sound levels generated by game-related activities were also recorded. Sound levels directly attributed to the game exceeded 70 dBA L_{max} a total of 38 times during the game. A summary of these maximum noise levels is presented in Table 3.5-5.

Table 3.5-5
Maximum Noise Levels Generated at Sacramento River Cats Baseball Game

Game Event	Noise Level (dBA L_{max})
Cheering during free hot dog giveaway	70.2
Booing by crowd	70.5
Organ playing "Charge!"	72.9–73.2
Singing of "Take Me Out to the Ball Game"	76.1
Crowd cheering with loudspeaker music	71.2–76.2
Trumpet playing "Charge!"	71.1–78.1
Crowd cheering	70.8–79.8
Crowd cheering during race game on scoreboard monitor	82.4
Crowd cheering after a home run	82.2–83.0
Postgame fireworks[1]	110.5

[1] The distance of postgame fireworks from the sound-level meter is unknown.

Source: Measurements collected by EDAW on July 2, 2005, from a location approximately 200 feet outside the center field wall.

EXISTING GROUNDBORNE VIBRATION

Existing sources of groundborne vibration in the project area include heavy rail traffic on the Southern Pacific Railroad tracks located approximately 400 feet north of the River 3 area, roadway traffic on SR 275, and any trucks and buses traveling on adjacent roadways.

EXISTING NOISE SURVEY

An ambient noise survey was conducted by EDAW on Thursday, May 26, 2005, to document the existing noise environment at various locations within the project area. Short-term sound-level measurements were taken in accordance with the ANSI acoustic standards at six locations in the project area using a Larson Davis model 820 sound-level meter. The short-term L_{eq}, L_{max}, and L_{min} values for each ambient noise measurement location are presented in Table 3.5-6. The locations of the sound-level measurements are shown in Exhibit 3.5-2. Based on the measurements conducted, average daytime noise levels within the project area range from 53.7 to 65.0 dBA L_{eq}, while maximum noise levels range from 69.6 to 91.6 dBA L_{max}.

Table 3.5-6
Existing Ambient Noise Levels

Noise Measurement Location	Time of Day	Predominant Noise Source	Noise Level (dBA)		
			L_{eq}	L_{max}	L_{min}
1 – Southeast corner of intersection of D Street and Second Street; 55 feet south of railroad tracks	11:07 a.m.–11:47 a.m.	No predominant source, except during single train passing (Amtrak)	65.0	91.6	48.8
2 – Southeast corner of lot of house at 704 Fourth Street, near north side of Washington Street property	11:59 a.m.–12:14 a.m.	Traffic on SR 275 (only one car passed on Fourth Street)	55.9	74.9	49.2
3 – Northeast corner of intersection of Fifth Street and West Capitol Avenue	12:12 p.m.–12:38 p.m.	Traffic on Fifth Street and West Capitol Avenue	64.4	84.5	51.5
4 – Near northeast corner of intersection of Fourth Street and West Capitol Avenue; 30 feet north of centerline of near travel lane of West Capitol Avenue	12:43 p.m.–12:58 p.m.	Traffic on West Capitol Avenue (only three cars passed on Fourth Street)	63.0	76.2	48.5
5 – Near southeast corner of River 1 area; 210 feet north of edge of SR 275 and 30 feet west of the River Walk Park path	1:15 p.m.–1:30 p.m.	Traffic on SR 275 and, on occasion, the steam locomotive in Old Sacramento	56.7	68.3	52.9
6 – East side of River 2; 30 feet west of the River Walk Park path	1:36 p.m.–1:51 p.m.	Traffic on SR 275 and, on occasion, the steam locomotive in Old Sacramento	53.7	69.6	50.4
7 – Sidewalk in front of single-family home at 222 E Street; across from north side of River 3 area	9:28 a.m.–9:43 a.m.	No predominant source; birds, trees in wind, traffic on SR 275, train horns	60.6	77.9	52.9

Source: Compiled by EDAW 2005 (measurements 1–6 collected on May 26, 2005; measurement 7 collected on June 16, 2005)

3.5.4 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

To assess potential short-term construction noise impacts, sensitive receptors and their relative exposure (considering topographic barriers and distance) were identified. Noise levels of specific construction equipment were determined and resultant noise levels at those receptors were calculated.

With respect to traffic noise, EDAW conducted traffic noise modeling based on daily traffic volumes obtained from the traffic analysis prepared for this project by DKS Associates. The FHWA Traffic Noise Prediction Model (FHWA 1988) was used to calculate traffic noise levels along affected roadways, based on the trip distribution estimates obtained from the traffic analysis prepared for this project. The contribution of the proposed project to the existing traffic noise levels along area roadways was determined by comparing the predicted noise levels at 50 feet from the centerline of the near travel lane with and without project-generated traffic. Site reconnaissance data and aerial photographs were used to determine whether modeled increases to roadway noise levels would adversely affect nearby existing or proposed noise-sensitive land uses.

The assessment of long-term noise impacts included an analysis of area- and stationary-source noise impacts associated with the proposed project, including noise from commercial activities (e.g., loading dock activities), based on existing documentation and site reconnaissance data. This analysis included an evaluation of the proposed noise-generating uses that could affect both on-site and off-site noise-sensitive receptors.

The compatibility of the proposed land uses with the existing and future predicted noise environments, including operational noise from on-site and off-site stationary, mobile, and area sources, was also addressed. This analysis includes an examination of maximum noise levels generated by events at nearby Raley Field.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following thresholds of significance were used to determine whether implementing the proposed project would result in a significant noise impact. These thresholds of significance are based on the State CEQA Guidelines, the *City of West Sacramento General Plan*, and the City of West Sacramento Noise Ordinance. Based on the State CEQA Guidelines, a noise impact is considered significant if implementation of the proposed project would result in any of the following:

- exposure of persons to or generation of noise levels in excess of standards established in a local general plan or noise ordinance, or other applicable standards of other agencies;
- exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels; or
- for a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.

The proposed project is not located within 2 miles of a public airport or anywhere near a private airstrip and would not result in a noise impact for the last two criteria listed above.

The following applicable thresholds of significance have also been used to determine whether implementing the proposed project would result in a significant noise impact. A noise impact is considered significant if any of the following would occur:

- Project-generated construction noise levels exceed any of the exterior noise standards contained in Table 3.5-2a. Table 3.5-2a repeats standards included in General Plan Policy E.1. For residential land uses, the exterior noise standard is 50 dBA L_{eq} and 70 dBA L_{max} during daytime hours (7 a.m.–10 p.m.).

- Construction or operation of the project exposes persons to excessive groundborne vibration levels. This analysis applies the FTA's vibration standards, which are based on human response (e.g., 65 vibration decibels [VdB] for land uses such as hospitals where low ambient vibration is essential for interior operations, 83 VdB for institutional land uses such as offices, and 80 VdB for residential buildings). This analysis also applies the standards established by both CHABA (i.e., 0.25 in/sec PPV for fragile structures) and Caltrans (i.e., 0.20 in/sec PPV for normal structures) to address the potential for PPV to result in structural damage to buildings.

- Nontransportation single-event noise levels associated with project construction or operation exceed the daytime or nighttime L_{max} standards for residential land uses of 70 dBA L_{max} and 65 dBA L_{max}, respectively (Table 3.5-2a).

- Nontransportation noise levels associated with the project exceed the performance standards of General Plan Policy E.2, as presented in Table 3.5-2a. For residential land uses, the exterior noise standard for nontransportation noise sources is an hourly noise level of 50 dBA L_{eq} and/or 70 dBA L_{max} during daytime hours (7 a.m.–10 p.m.) and 45 dBA L_{eq} and/or 65 dBA L_{max} during nighttime hours (10 p.m.–7 a.m.).

- Traffic generated by the project exposes existing sensitive receptors to exterior noise levels that exceed the exterior noise level standards of Table 3.5-2c (General Plan Policy E.5). In the Washington Specific Plan Area, this includes an exterior noise level standard of 70 dBA CNEL/L_{dn} for residences, transient lodging, hospitals, nursing homes, churches, meeting halls, playgrounds, and neighborhood parks (as shown by note 3 of Table 3.5-2c). The transportation noise standard for interior spaces of residences, transient lodging, hospitals, and nursing homes is 45 dBA CNEL/L_{dn}. The transportation noise standard for interior spaces of office buildings, schools, libraries, and museums is 45 dBA L_{eq}, as determined by a typical worst-case hour during a period of use. The transportation noise standard for interior spaces of churches and meeting halls is 40 dBA L_{eq} and for theaters, auditoriums, and music halls is 35 dBA L_{eq}, as determined by a typical worst-case hour during a period of use.

- The land uses proposed by the project are exposed to noise levels generated by nontransportation sources that exceed the standards of the *City of West Sacramento General Plan* (Policy E.1) listed in Table 3.5-2a. For residential land uses, the exterior noise standard is 50 dBA L_{eq} and 70 dBA L_{max} during daytime hours (7 a.m.–10 p.m.).

- The land uses proposed by the project are exposed to transportation-generated noise levels that exceed the exterior and/or interior standards of the *City of West Sacramento General Plan* (Policy E.4) listed in Table 3.5-2c. This includes an exterior noise level standard of 70 dBA CNEL/L_{dn} applicable to all land uses in the Washington Specific Plan Area. It also includes the transportation noise standard for interior spaces of residences, transient lodging, hospitals, and nursing homes, which is 45 dBA CNEL/L_{dn}. The transportation noise standard for interior spaces of office buildings, schools, libraries, and museums is 45 dBA L_{eq}, as determined by a typical worst-case hour during a period of use. The transportation noise standard for interior spaces of churches and meeting halls is 40 dBA L_{eq} and for theaters, auditoriums, and music halls is 35 dBA L_{eq}, as determined by a typical worst-case hour during a period of use.

The thresholds of significance applied in this analysis focus on local exterior noise standards established by the *City of West Sacramento General Plan* and the City Noise Ordinance. Unless stated otherwise, an exceedance of interior noise level standards would not occur if exterior noise standards are achieved because of sufficient exterior-to-interior noise reduction of all common buildings.

IMPACT ANALYSIS

IMPACT 3.5-1 Noise and Vibration — Short-Term Construction Noise. *Construction of the proposed project would generate noise levels that exceed the standards of the City of West Sacramento Noise Ordinance and result in a noticeable increase in ambient noise levels at sensitive receptors. This impact is considered* ***significant.***

Construction operations at the project site would include site grading, clearing, and excavation associated with the site preparation phase; and pile driving, paving, material deliveries, building framing, and other miscellaneous operations during the construction phase.

The highest noise levels would be generated during pile driving, which can reach 101 dBA at a distance of 50 feet, as indicated in Table 3.5-7. Typically, pile driving would result in the high noise levels for approximately 5 to 10 minutes per half hour during the occurrence of such operations. Because noise from a point source attenuates approximately 6 dBA/DD, this would result in pile-driving noise of about 95 dBA at a distance of 100 feet and 89 dBA at 200 feet. There are several buildings within 200 feet of the project area. Single-family residences, which are considered noise-sensitive receptors, are located north of the Washington Street property and west and northwest of the River 3 area. Offices are located west of the Washington Street property and between the River 1 and River 2 areas, and recreational uses are located along the River Walk Park/levee just east of the River 1, River 2, and River 3 areas. This recreational space and these office buildings are in use during the day, when pile driving would most likely occur. While the offices adjacent to these areas are not typically considered sensitive receptors, levels of 89 dBA and higher would be noticeable at these buildings, as well as along River Walk Park. Pile driving would most likely be loud enough to cause annoyance to the occupants of these nearby land uses, especially because it does not generate continuous noise, but sharp, intermittent noise peaks.

Table 3.5-7
Typical Construction Equipment Noise Levels

Type of Equipment	Noise Level in dBA at 50 feet	
	Without Feasible Noise Control	With Feasible Noise Control [a]
Pile driver (impact)	101	95
Dozer or tractor	80	75
Excavator	88	80
Compactor	82	75
Front-end loader	79	75
Backhoe	85	75
Grader	85	75
Crane	83	75
Generator	78	75
Truck	91	75

[a] Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturer's specifications.
Source: EPA 1971

Aside from pile drivers, other on-site equipment required is not known at this time; however, based on similar projects, it would be anticipated to include excavators, graders, loaders, haul trucks, and cranes. According to

EPA, the noise levels of primary concern are typically associated with the site preparation phase because of the on-site equipment associated with clearing, grading, and excavation. Depending on the operations conducted, individual equipment noise levels can range from 79 to 91 dBA at 50 feet. The simultaneous operation of the on-site heavy-duty equipment associated with the project, as identified above, could potentially result in combined intermittent noise levels of approximately 94 dBA at 50 feet from the project site. Based on these equipment noise levels and assuming a noise attenuation rate of 6 dBA/DD and no intervening barriers, exterior noise levels at sensitive receptors located within approximately 800 feet of the project site could potentially exceed 70 dBA without feasible noise control.

The temporary construction noise associated with on-site equipment could potentially expose sensitive receptors to or generate noise levels in excess of the applicable noise standards and/or result in a noticeable increase in ambient noise levels. This impact is considered **significant**.

Mitigation Measure 3.5-1: Implement Measures to Reduce Short-Term Construction Noise

The City shall ensure that the construction contractor(s) implement the following measures during project construction:

- ► All construction vehicles or equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and acoustical shields or shrouds, in accordance with manufacturers' recommendations. The amount of noise reduction provided by feasible noise controls on heavy-duty construction equipment is shown in Table 3.5-7.

- ► Construction operations shall be limited to the hours between 7 a.m. and 7 p.m. 7 days a week. This measure would ensure that construction noise does not occur during the more sensitive evening and nighttime hours.

- ► Construction equipment and truck routes shall be arranged to minimize travel adjacent to occupied residences. For instance, construction-related traffic shall avoid the use of E Street, F Street, and Fourth Street (north of G Street) and shall instead focus use on West Capitol Avenue, Third Street (south of G Street), D Street, and Second Street.

- ► Stationary construction equipment and staging areas shall be located as far as reasonably possible from residential dwellings, adjacent office buildings, and River Walk Park along the levee. Staging areas shall be a minimum of 75 feet from residences. The best staging area locations would be the south side of the Washington Street property, near the intersection of Fourth Street and West Capitol Avenue; the southwest side of the River 1 area; the northwest side of the River 2 area; and the east side of the River 3 area.

- ► A temporary solid construction/noise barrier shall be erected along the northern boundary of the portion of the Washington Street property west of Fourth Street (i.e., between the project site and the immediately adjacent residences). The noise barrier shall be constructed of ¾-inch medium-density overlay plywood sheeting or other acceptable material having a surface weight of 2 pounds per square foot or greater and a demonstrated Sound Transmission Class rating of 30 or greater as defined by American Society for Testing and Materials (ASTM) Test Method E90. To avoid objectionable noise reflections, the source side of the barrier must be lined with an acoustic absorption material that has a noise reduction coefficient of 0.70 or greater, in accordance with ASTM Test Method C423. The barrier shall be of sufficient height to block the line of sight between operating construction equipment and ground-level sensitive receptors to protect outdoor residential areas and the first floor of residences. In most cases, a 7-foot wall would be sufficient to provide this level of protection. The barrier shall not contain any significant gaps at its base or face, except for site access and surveying openings. If a wall, fence, or other permanent barrier would be constructed as part of the proposed project along the portion of the project boundary in question, and this barrier would meet the criteria described above, it may function as the construction noise barrier if it is installed and completed before any other construction activities are initiated.

- To further mitigate pile-driving noise impacts, holes shall be predrilled to the maximum feasible depth (determined by soil conditions, groundwater levels, and other factors). This will reduce the number of blows required to seat the pile, and will concentrate the pile-driving activity closer to the ground where noise can be attenuated more effectively.

- A noise disturbance coordinator shall be designated by the project applicants or contractor and approved by the City, and this person's telephone number shall be conspicuously posted around the project site and in adjacent public spaces. This noise disturbance coordinator shall receive all public complaints about construction-related noise and vibration, shall be responsible for determining the cause of the complaint, and shall implement any feasible measures to be taken to alleviate the problem. All complaints and resolution of complaints shall be reported to the City weekly.

While implementation of Mitigation Measure 3.5-1 would reduce exposure to construction noise at nearby sensitive receptors, construction noise levels could still exceed the standards established by the City of West Sacramento Municipal Code (Table 3.5-2a), including the exterior noise standards of 50 dBA L_{eq} and 70 dBA L_{max} for residential land uses during daytime hours. For instance, a pile driver properly fitted with feasible noise controls would generate approximately 83 dBA at a distance of 200 feet and a temporary sound wall would not provide more than an additional 10 dBA of noise reduction. Thus, the noise generated by pile driving would exceed the City's 70 dBA L_{max} standard during daytime hours. Other equipment, such as dozers, loaders, and backhoes, would individually generate noise levels of 63 dBA at 200 feet, which is above the City's daytime hourly noise standard (50 dBA L_{eq} at residential land uses during daytime hours) for nontransportation sources (Table 3.5-2a). Therefore, with implementation of this mitigation measure, Impact 3.5-1 would be **significant and unavoidable**.

IMPACT 3.5-2	Noise and Vibration — Exposure to Groundborne Vibration. *Operation of heavy-duty construction equipment could temporarily generate high levels of groundborne vibration that would exceed the human response–based thresholds of the FTA. In addition, pile-driving activity could generate vibration levels that exceed Caltrans's structural damage–based thresholds at nearby existing structures. This impact is considered* ***significant****.*

Construction activity can generate groundborne vibration as well as noise. Vibration generated by construction activities is normally associated with use of impact equipment such as jackhammers and pile drivers and the operation of some heavy-duty construction equipment, such as dozers and trucks. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Construction operations have the potential to result in varying degrees of temporary ground vibration, depending on the specific types of equipment used and operations involved. Table 3.5-8 displays typical vibration decibel levels for common types of construction equipment. The effects of ground vibration may be imperceptible at the lowest levels, result in low rumbling sounds and detectable vibrations at moderate levels, and high levels of vibration can cause sleep disturbance in places where people normally sleep or annoyance in buildings that are primarily used for daytime functions. The groundborne vibration associated with garbage trucks, buses, and other vehicles used during the regular operation of a community do not generate high levels of vibration where standard road and structure construction practices have been used and are not addressed in this analysis.

Most of the existing structures in the project vicinity are located more than 75 feet away from any area where construction activity would occur, including the residences on the opposite side of both Third and E Streets from the River 3 area and residences across G Street from the Washington Street property. As shown in Table 3.5-8, the vibration levels generated by construction equipment at this distance would not exceed the human response–based vibration thresholds for residences and office buildings (80 VdB and 83 VdB, respectively). However, the residences located along the south side of G Street, between Fourth and Fifth Streets, and immediately north of the Washington Street property, are located closer than 75 feet to the Washington Street property boundary and therefore could be exposed to high groundborne vibration levels during construction at this location. Because construction-related vibration at this location may result in sleep disruption or daytime annoyance at these locations, this impact is considered **significant**.

Table 3.5-8 Vibration Source Levels for Construction Equipment				
Construction Equipment	Approximate VdB			
	25 Feet	50 Feet	75 Feet	100 Feet
Large bulldozer	87	81	77	75
Loaded trucks	86	80	76	74
Jackhammer	79	73	69	67
Small bulldozer	58	52	48	46
Source: Federal Railroad Administration 1998; attenuation levels calculated by EDAW 2005				

Groundborne vibration can also potentially damage the foundations and exteriors of existing structures even if it does not result in a negative human response. Groundborne vibration that can cause this type of damage is typically limited to impact equipment. Table 3.5-9 displays typical PPV levels for construction equipment.

Table 3.5-9 Representative Vibration Source Levels for Construction Equipment		
Equipment		Peak Particle Velocity at 25 feet (in/sec)
Pile driver (impact)	Upper range	1.518
	Typical	0.644
Pile driver (sonic)	Upper range	0.734
	Typical	0.170
Large bulldozer		0.089
Caisson drilling		0.089
Loaded trucks		0.076
Jackhammer		0.035
Small bulldozer		0.003
Source: Federal Railway Administration 1998		

For the proposed project, structural damage to existing buildings could only potentially be an issue during pile driving. Impact pile drivers produce a high level of vibration for short periods (0.2 second) with sufficient time between impacts to allow the resonant effects on a building to decay before the next vibration event (FTA 1995). Impact pile driving can produce PPV values of up to 1.518 at 25 feet, as shown in Table 3.5-9. Assuming normal propagation conditions, this level would propagate to below the Caltrans vibration threshold of 0.20 in/sec PPV at a distance of 100 feet. As discussed previously, some existing residential structures immediately north of the Washington Street property are located less than 100 feet from the project boundary to the project's construction lots. Some residences along Third Street, E Street, and Fourth Street are also less than 100 feet from the project boundary. Because construction-generated groundborne vibration could result in structural damage to nearby existing residences, this impact is considered **significant**.

Mitigation Measure 3.5-2: Implement Design Considerations and Alternative Construction Methods to Avoid Potential Exposure of Off-Site Residential Structures to Groundborne Vibration

The City shall ensure the construction contractor(s) and/or the project applicants (as appropriate) implement measures to avoid the exposure of nearby residential structures to ground vibration levels that exceed the standards established by both CHABA and Caltrans. These measures may include, but not be limited to, the following:

- All earthmoving equipment on the construction site shall be operated as far away from vibration-sensitive sites as reasonably possible.
- Earthmoving and ground-impacting operations shall be phased so as not to occur simultaneously in areas close to off-site sensitive receptors. The total vibration level produced could be significantly less when each vibration source operates separately.
- To the extent feasible, project structures shall be designed so that driven piles are placed at least 100 feet from nearby residences. If pile driving is required within 100 feet of residences, sonic or vibratory pile driving, which cause substantially lower vibration levels compared with impact pile driving, shall be used.
- All measures described in Mitigation Measure 3.5-1 shall be implemented. Many of these measures would directly minimize groundborne vibration, such as limiting construction operations to the hours between 7 a.m. and 7 p.m. 7 days a week. Pile driving shall be limited to the hours between 8 a.m. and 7 p.m. on Saturdays and Sundays. Also, holes for driven piles shall be predrilled to the maximum feasible depth. This will reduce the number of blows required to seat the pile, and will concentrate the pile-driving activity closer to the ground where noise can be attenuated more effectively. In addition, impact pile driving shall be avoided where possible and, instead, drilled piles or the use of a sonic or vibratory pile driver, which causes lower vibration levels compared with impact pile driving, shall be used where geological conditions permit their use.

With implementation of Mitigation Measure 3.5-2, the potential for groundborne vibration generated by heavy-duty construction equipment to adversely affect occupants of existing nearby dwellings would be eliminated during more sensitive nighttime and evening hours. It would also be minimized during daytime hours on weekdays and a noise disturbance coordinator (referenced in Mitigation Measure 3.5-1) would be assigned to address any individual complaints. In addition, because pile driving would be conducted at least 100 feet from the nearest building, structural damage to nearby buildings from pile-driving activity would be altogether avoided. With implementation of this mitigation measure, vibration levels would not exceed the applicable thresholds; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.5-3	Noise and Vibration — Stationary- and Area-Source Noise. *Increases in stationary- and area-source noise associated with the proposed residential, commercial, and office land uses included in the proposed project could potentially exceed the City's standards for hourly and maximum noise levels. This impact is considered* ***significant****.*

The proposed project consists of both residential and commercial development, which would include stationary and area noise sources such as mechanical building equipment, trash collection activity, and loading dock activity. The levels of noise typically associated with these sources are discussed separately below.

Residential Land Uses

Noise from proposed residential dwellings would expose existing nearby residences to minor increases in ambient noise levels. Noise typically associated with such development includes landscaping equipment, voices, and amplified music. Because the multifamily residential buildings would be multiple stories high, household noises that might occur on balconies or that might be audible through open windows, such as voices and music, could potentially be heard from long distances. The types of noises generated would be similar to those that currently occur in existing nearby neighborhoods, although some increase may occur because of the increased population density of the area. Activities associated with these land uses would be expected to result in only minor increases in ambient noise levels, primarily during the day and evening hours and less frequently at night, as perceived at the closest residential receptors. Therefore, this impact is considered **less than significant**.

Mechanical Building Equipment

Mechanical building equipment (e.g., HVAC systems) operating at both residential and commercial buildings on the project site could generate noise levels of approximately 90 dBA at 3 feet from the source (EPA 1971). These units could be relatively large because of the size of the proposed buildings. Typically, these mechanical equipment systems are shielded from direct public exposure and housed on rooftops, in equipment rooms, or in exterior enclosures (EPA 1971). However, if noise from these devices is not shielded, their operation could result in noise levels of 62 dBA at 75 feet, which is the closest distance of some of the off-site residences to the property line. This level would exceed the City's hourly standard of 50 dBA L_{eq} during daytime hours and 45 dBA L_{eq} during nighttime hours (Table 3.5-2a). Thus, this impact is considered **significant**.

Loading Dock Activity

Although it is known that the proposed project would include office and retail uses, the specific types of retail uses that would be developed under the proposed project have not yet been determined. Potential sources of noise associated with retail uses can vary substantially. The type and intensity of noise associated with such uses can include occasional parking lot–related noise (e.g., opening and closing of vehicle doors, people talking, car alarms), loading dock operations (e.g., backup alarms for delivery trucks, use of forklifts, hydraulic lifts), trash compactors, and air compressors. Noise from such equipment can reach intermittent levels of approximately 90 dBA at 50 feet from the source (EPA 1971). Early-morning truck deliveries also may be a source of elevated noise levels at nearby receptors.

Operational noise levels associated with the proposed commercial land uses (office and retail) could potentially exceed the City's hourly L_{eq} standards at nearby existing and future planned residences. In addition, increases in single-event noise levels, such as backup alarms from delivery trucks, during evening and nighttime hours could result in increased levels of disturbance and sleep disruption to occupants of nearby residential dwellings. Generally, impulses exceeding the background noise by more than 10 dBA are potentially startling or sleep-disturbing. Repetitive impulsive noises can be disturbing to some individuals even if at levels below the average noise level (EPA 1974). Furthermore, such single-event noises could potentially exceed the City's maximum noise standards of 70 dBA L_{max} during daytime hours and 65 dBA L_{max} during nighttime hours (Table 3.5-2a). As a result, this impact is considered **significant**.

Garbage Collection

As at most multifamily apartment complexes and commercial buildings, trash would be collected from large refuse dumpsters, possibly multiple times each week. The residents of some existing nearby single-family residences are not currently subject to this type of noise because they are not located near large trash dumpsters. Although noise generated by trash collection would likely not increase hourly L_{eq} levels or CNEL levels near the project site, the increased frequency of single-event noise levels generated by trash collection activities could adversely affect nearby off-site residences. Noise levels generated by garbage collection reach as high as 89 dBA L_{max} from a distance of 50 feet with frequent occurrence of single-event noise levels exceeding 80 dBA (EDAW 2004). These noise levels are sometimes generated high off the ground as a hydraulic lift shakes trash from the dumpster into the truck. Depending on the location of the garbage dumpsters and the time of day when garbage is collected, noise from garbage collection activities could result in increased sleep disruption and interference to nearby off-site sensitive receptors. This impact is considered **significant**.

Mitigation Measure 3.5-3: Implement Design Measures to Reduce Stationary- and Area-Source Noise

The City shall ensure implementation of the following mitigation measures in the design and operation of the proposed project to reduce exposure of nearby existing and future planned sensitive receptors to noise levels that exceed the City's standards for nontransportation noise sources, including an hourly L_{eq} standard of 50 dBA and 70 dBA L_{max} for residential land uses during daytime hours (Table 3.5-2a).

- Mechanical equipment (e.g., HVAC equipment, backup generators) shall be located at the farthest feasible distance from and/or be shielded from nearby existing and proposed future noise-sensitive land uses. A noise evaluation based on contractor specifications for the equipment shall be conducted to determine whether noise levels generated by the equipment would exceed 45 dBA L_{eq} at residences. If this threshold would be exceeded, the equipment shall be moved or shielded until the 45 dBA L_{eq} standard can be met.

- Garbage dumpsters and commercial loading and unloading areas shall be located as far as reasonably possible from existing off-site sensitive receptors, as well as from common outdoor activity areas of proposed multifamily residential buildings. They shall also be located such that buildings shield nearby residential land uses from noise generated by loading dock and garbage collection activities (e.g., subgrade). If determined necessary by the City, additional sound barriers shall be constructed at these activity sites to protect existing and planned residential uses. Feasible shielding measures shall be identified to reduce project-related noise impacts to a less-than-significant level by demonstrating compliance with the maximum allowable noise limits in the Noise Ordinance.

- Loading dock activity, delivery truck activity at the commercial venues, and garbage collection activity at all venues developed on the project site shall occur only during the daytime hours of 7 a.m. to 7 p.m. to prevent nighttime sleep disturbance at nearby existing and proposed residential land uses.

- The backup alarms on delivery vehicles (e.g., trucks and forklifts) owned or operated by the commercial venues on-site shall be equipped with sensor-based backup alarms that sound only when objects or people are present behind the vehicle, as opposed to alarms that automatically sound when a vehicle is operated in reverse.

With implementation of this mitigation measure, on-site stationary noise levels generated by HVAC equipment, garbage collection activity, and loading dock activity would meet City standards for nontransportation noise sources, and nighttime noise generated by garbage collection and loading dock activity would be eliminated; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.5-4	Noise and Vibration — Operational Traffic Noise. *Implementation of the proposed project would contribute to an increase in traffic noise levels at nearby existing sensitive receptors. Increased traffic noise levels would not exceed the City's standards for maximum allowable noise exposure for transportation sources applicable to land uses in the Washington Specific Plan Area (Table 3.5-2c). Therefore, this impact is considered* ***less than significant.***

The increase in daily traffic volumes resulting from implementation of the Raley's Landing project would generate increased noise levels along nearby roadway segments. The FHWA Traffic Noise Prediction Model (FHWA 1988) was used to calculate traffic noise levels along affected roadways for baseline traffic conditions, with and without implementation of the proposed project, based on the trip distribution estimates obtained from the traffic analysis prepared for this project. The project's contribution to the existing traffic noise levels along area roadways was determined by comparing the predicted noise levels with and without project-generated traffic.

Table 3.5-10 summarizes the CNEL/L_{dn} at 50 feet from the centerline of the near travel lane for existing conditions with and without proposed project traffic for the roadway segments in the project area. The roadway noise levels presented in the table represent worst-case potential noise exposures, which assume no natural or artificial shielding between the roadway and a receptor located 50 feet from the centerline of the near travel lane.

The segment of SR 275 that runs along the south side of the project area (between Third and Fifth Streets) would also experience increased traffic and associated traffic noise. According to estimates using the FHWA Traffic Noise Prediction Model (FHWA 1988), the addition of traffic generated by the project would extend the 60 dBA CNEL contour of SR 275 to a distance of 593 feet from the centerline of the roadway. This estimate, however, does not account for the fact that this road segment is partially elevated and bordered by thick patches of vegetation. Nonetheless, because no existing sensitive receptors are located within 600 feet of this road segment the increase in traffic is not expected to result in noise levels that exceed city's dBA CNEL/L_{dn} standard. The impact on this segment of SR 275 is considered **less than significant**.

Table 3.5-10
Predicted Traffic Noise Levels along Local Roadways

Roadway Segment	Noise Level (dBA CNEL/L_{dn}) at 50 Feet from Centerline of Near Travel Lane		
	Existing	Existing + Project	Increase
F Street west of Eighth Street	55.4	56.9	1.49
F Street between Fifth Street and Sixth Street	55.0	56.5	1.55
G Street between Fifth Street and Sixth Street	46.7	47.6	0.90
Fourth Street between E Street and F Street	44.3	52.3	8.04
Fourth Street between G Street and West Capitol Avenue	45.4	59.9	14.50
Third Street between G Street and West Capitol Avenue	59.1	63.9	4.82
Fifth Street between G Street and West Capitol Avenue	60.5	62.1	1.59
West Capitol Avenue west of Fifth Street	63.0	64.4	1.45
Fifth Street between E Street and F Street	59.7	61.9	2.15
Third Street between E Street and F Street	57.8	62.8	4.97

Notes: Traffic noise levels were modeled using the FHWA Traffic Noise Prediction Model based on traffic information (e.g., average daily traffic, vehicle speeds, roadway width) generated for this DEIR and assuming no natural or artificial shielding (e.g., vegetation, berms, walls, buildings). Refer to Appendix E for modeling input assumptions and output results.

Source: Modeling performed by EDAW in 2005

As shown in Table 3.5-10, the increase in traffic noise levels along the some of the modeled roadway segments would be approximately 5 dBA and therefore clearly noticeable. These include the segments of Fourth Street between E Street and F Street (which passes by residential land uses), Third Street between G Street and West Capitol Avenue, and Third Street between E Street and F Street (which also passes by residential land uses).

The traffic noise level along Fourth Street between G Street and West Capitol Avenue would increase by approximately 14.50 dBA to 59.9 dBA CNEL/L_{dn}. This increase would be perceived as more than a doubling of sound, which is considered to be a degradation of the existing noise environment, particularly for the residents of the two single-family residences on west side of this road segment.

None of the exterior noise levels along local roads, however, would exceed the exterior standard of 70 dBA CNEL/L_{dn} that is applicable to the Washington Specific Plan Area at a distance of 50 feet from the centerline of the near travel lane. Moreover, none of the exterior traffic noise levels would exceed 65 dBA CNEL/L_{dn}. Because the noise reduction from common residential building construction typically provides an exterior-to-interior reduction of 25–30 dBA (Paul S. Veneklasen & Associates 1973, cited in Caltrans 2002b), interior noise levels in buildings along the studied road segments would not exceed 40 dbA CNEL/L_{dn} for interior spaces of roadside buildings. Therefore, increased traffic noise would also not result in an exceedance of City's standard of 45 dbA CNEL/L_{dn} for interior spaces (Table 3.5-2c) of noise-sensitive receptors. Thus, the impact of increased traffic noise generated by the project is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.5-5	Noise and Vibration — Land Use Compatibility with On-Site Noise Levels. *After development of the proposed project, some sensitive receptors proposed on the project site could be exposed to noise levels generated by freeway traffic and traffic on local roads and stadium events that exceed applicable noise standards. This impact is considered **significant**.*

As discussed previously, noise levels within the project area are predominantly influenced by railroad activity on nearby tracks, vehicle traffic on area roadways and freeways, and stadium events. The levels of noise typically associated with these sources and their compatibility with the proposed land uses are discussed separately below.

Railroad Activity

As discussed previously, the noise level generated by passing trains, including their warning horns, is 59.8 dBA CNEL/L_{dn} along the north side of River 3, which is the area of the project site most exposed to nearby railroad noise. Whether the number and types of trains operating on this line will change in the future is unknown at this time and predominantly relates to economic factors (Lund, pers. comm., 2005). Nonetheless, projections of future train and train horn noise levels can be estimated using guidance from the FTA (1995) and the Federal Railway Administration (2003). If, for example, the existing number of average daily train passes doubled to 82 trains per day, then the level of train noise at the River 3 property line, except warning horns, would increase to 55 dBA CNEL/L_{dn}. Under this scenario, the level of train horn noise would increase to 62.5 dBA CNEL/L_{dn}, resulting in a combined noise level of 63.2 dBA CNEL/L_{dn}. However, because the noise reduction from common building construction typically provides an exterior-to-interior reduction of 25–30 dBA (Paul S. Veneklasen & Associates 1973, cited in Caltrans 2002b), interior noise levels in buildings on River 3 would not exceed 38.2 dbA CNEL/L_{dn}. Because the trains that pass along these tracks do so intermittently throughout the day, it is presumed that the City's hourly interior noise standard of 45 dBA L_{eq} would not be exceeded in the proposed office buildings. Therefore, this impact is considered **less than significant**.

Vehicular Traffic

The FHWA Traffic Noise Prediction Model was used to calculate traffic noise levels along affected roadways for cumulative traffic conditions at full buildout of the Raley's Landing project and surrounding area in 2025 (see Section 3.3, "Transportation and Circulation"). Modeling of noise generated by cumulative traffic conditions is based on the trip distribution estimates generated for this report. Table 3.5-11 summarizes the calculated noise contour distances for future planned roadway segments in the vicinity of the project site. (A map of these roadway segments is shown in Exhibit 3.3-1 of Section 3.3, "Transportation and Circulation.") Predicted traffic noise contour distances were calculated assuming a noise reduction of approximately 4.5 dBA per doubling of distance from the roadway segment.

Based on the traffic noise modeling presented in Table 3.5-11, the loudest exterior traffic noise level reaching the project site would be generated by traffic on SR 275 between Third and Fifth Streets. The 70 dBA CNEL/L_{dn} contour of SR 275 would extend approximately 175 feet, which just reaches the property line of the Washington Street property and extends up to 150 feet into the River 1 area. Residential land uses developed in these portions of the River 1 area would therefore be exposed to exterior traffic noise levels that exceed the City's noise exposure standards for transportation noise sources (Table 3.5-2c). Affected areas may include outdoor activity areas or balconies of residential buildings, particularly those that would have a direct line of sight to SR 275.

Because the noise reduction from common residential building construction typically provides a minimum exterior-to-interior reduction of 25 dBA (Paul S. Veneklasen & Associates 1973, cited in Caltrans 2002b), interior noise levels in residential units located within the exterior 70 dBA CNEL/L_{dn} contour could exceed the City's 45 dbA CNEL/L_{dn} standard for interior noise levels. The exceedance of both the exterior and interior noise standards at these residences would be considered a **significant** impact.

As discussed previously in the "Traffic on Local Roads" section, the existing level of traffic noise from I-5/SR 99 was modeled to be 63.3 dBA CNEL/L_{dn} at the closest portion of the project site, the southeast side of the River 1 area. The actual level of freeway noise at the project site is lower because of the intervening buildings in Old Sacramento and the levees along the river, and this is supported by sound-level measurement 6 in Table 3.5-3. The project could, however, develop residential buildings with elevated outdoor areas, including private balconies and common-use areas (e.g., pools, sundecks) that have a direct line of sight to the freeway. Although the volume of freeway traffic is expected to increase steadily in the future, the increase in freeway noise would be nominal given that a 3-dBA increase could result only from a doubling of traffic volume, which is not expected. Therefore, elevated outdoor areas on residential buildings proposed by the project would not be exposed to freeway noise levels that exceed the City's maximum allowable exterior noise exposure standard of 70 dBA CNEL/L_{dn} in the Washington Specific Plan Area. Because the noise reduction from common residential building construction typically provides an exterior-to-interior reduction of 25–30 dBA (Paul S. Veneklasen & Associates 1973, cited in Caltrans 2002b), interior noise levels in buildings exposed to freeway noise would not exceed 40 dbA CNEL/L_{dn} for interior spaces of residential buildings. Therefore, freeway noise would also not result in an exceedance of City's standard of 45 dbA CNEL/L_{dn} for residential interior spaces (Table 3.5-2c). As a result, this impact is considered **less than significant**.

Table 3.5-11
Summary of Cumulative Traffic Noise Levels

Roadway Segment and Location	Distance (ft) from Roadway Centerline to L_{dn}/CNEL (dBA)				L_{dn}/CNEL (dBA) 50 ft from Centerline of near Travel Lane
	70 CNEL	65 CNEL	60 CNEL	55 CNEL	
Third Street between G Street and West Capitol Avenue	—	82.7	172.9	369.9	65.94
Fifth Street between G Street and West Capitol Avenue	—	88.1	184.5	395.0	66.32
Fourth Street between G Street and West Capitol Avenue	—	—	74.0	158.4	61.45
Third Street between F Street and E Street	—	57.6	119.9	256.3	63.96
SR 275 between Third Street and Fifth Street	174.8	372.7	800.9	1724.4	75.59

Note: See Appendix E for traffic noise modeling input and output.
Source: Modeling performed by EDAW in 2005

Stadium Events

As presented in the "Stadium Noise" section above, hourly average sound levels generated at an evening Sacramento River Cats baseball game (hourly L_{eq}) reach as high as 65.9 dBA L_{eq} with maximum sound levels as high as 83.0 dBA L_{max} (Table 3.5-5). The attenuation rate of stadium noise is difficult to estimate in part because the stadium is considered neither a point source nor a line source. Also, it is difficult in some cases to specifically characterize the distance to the noise source from which the stadium sound levels were measured (e.g., distance from the noise meter to play on the field or stadium speakers). Assuming that the sound-level measurements presented in Table 3.5-5 were collected 400 feet from the noise source, which is the approximate distance to the measurement site to the baseball diamond's infield, and a 7.5 dBA/DD attenuation rate, which is typically used for point sources in soft noise environments, stadium noise would attenuate by approximately 6.5 dBA before it reaches the Washington Street property and 7.5 dBA before it reaches the River 1 area. This estimation is considered conservative because the stadium spectators are located 550–700 feet from the measurement site and the stadium is not a true point source. With this attenuation, hourly average exterior sound levels from the stadium would be 59.4 dBA L_{eq} at the Washington Street property and 58.4 dBA L_{eq} in the River 1 area, both of which would exceed the City's daytime and nighttime hourly L_{eq} standards for new residential land uses affected by nontransporation noise sources (Table 3.5-2a). The corresponding daytime and nighttime interior noise standards (i.e., 45 dBA L_{eq} and 35 dBA L_{eq}, respectively), however, would not be exceeded, assuming the minimum exterior-to-interior noise reduction of 25 dBA provided by common residential building construction (Paul S. Veneklasen & Associates 1973, cited in Caltrans 2002b). Maximum stadium noise levels would attenuate to 76.5 dBA L_{max} and 75.5 dBA L_{max} at these respective locations. These maximum levels also exceed the City's daytime exterior noise performance standards of 50 dBA L_{eq} and 70 dBA L_{max} for nontransportation sources (Table 3.5-2a). Some additional attenuation may be provided by the elevated portion of SR 275 and its vegetated median and shoulders; however, balconies of some residential units developed by the project could have a direct line of sight to the stadium. In the 2005 season, 16 of the River Cats' 75 home games were scheduled for the day (before 5 p.m.), and most of the remaining 59 home games were played during more noise-sensitive evening hours. Also, it is anticipated that music concerts held at Raley Field are likely to generate higher hourly average noise levels because concert music is a more constant noise source and the concerts can accommodate larger crowds, as is the case with most stadiums (Paoletti Associates 1998). In fact, the City's noise standards are lowered by 5 dBA for noises consisting primarily of speech or music (Table 3.5-2a). Therefore, exposure of residential land uses proposed by the project to noise levels generated at both baseball games and music concerts is considered a **significant** impact.

Mitigation Measure 3.5-5: Implement Design Considerations to Reduce Exposure of Proposed Sensitive Receptors to Noise Generated by Off-Site Noise Sources

The City shall ensure that the following measures are implemented, where feasible, to reduce the exposure of sensitive receptors (i.e., buildings planned within the 70 dBA CNEL/L_{dn} contours of SR 275 or the 45 dBA L_{eq} and 65 dBA L_{max} contours of the stadium) to significant noise associated with traffic and stadium events:

- A Title 24 (California Code of Regulations) acoustical analysis shall be prepared for the residential components of the project to demonstrate how interior noise levels will achieve a 45 dBA CNEL/L_{dn}. Noise control measures, such as noise walls, berms, building setbacks, and structural design features, shall be incorporated into the development project design and construction of specified sound rating for each building element to achieve an interior noise level of 45 dBA CNEL/L_{dn}. The acoustical analysis shall be provided to the City for review and approval either with, or before, the submittal of building plans.

- The project applicants shall incorporate site-specific features in the design of residential developments on the Raley's Landing project site that reduce noise exposure at outdoor activity areas (e.g., private balconies and common outdoor activity areas). For instance, outdoor activity areas that are part of multifamily residential developments could be located such that the building(s) serve as a sound barrier to the nearest predominant noise source. Balconies, however, shall not be outright omitted on the basis of noise exposure so long as applicable interior noise standards are achieved.

- To address stadium noise (both average hourly levels and maximum levels), including noise generated by baseball games and music concerts, the project applicants shall incorporate increased noise-attenuation features (e.g., dual-pane, sound-rated windows; mechanical air systems; exterior wall insulation) into the design of residential dwelling units to ensure that interior noise levels are below interior noise standards established by the City of West Sacramento (Table 3.5-2a). These features shall be included in the noise analysis prepared before the approval of building plans. For residential dwellings, the design features shall ensure that hourly average interior noise levels from stadium events are below 40 dBA L_{eq} during daytime hours (7 a.m. to 10 p.m.) and below 30 dBA L_{eq} during nighttime hours (10 p.m. to 7 a.m.).

- The City shall require the project applicants or building owner to disclose issues of stadium and freeway noise levels and their meaning to purchasers and/or renters before contract or title transfer for residential property on the project site.

Implementation of the above mitigation measures would be effective in reducing interior noise levels of new development to less-than-significant levels. Design considerations for the purpose of reducing exposure to exterior noise levels, however, may not always be considered feasible. For instance, it may not be feasible to set back residential dwellings beyond the nearest 70 dBA L_{dn} /CNEL traffic noise contours or beyond the reach of stadium concert noise levels that exceed 45 dBA L_{eq} and 65 dBA L_{max} during daytime hours or 40 dBA L_{eq} and 60 dBA L_{max} during nightime hours. This is impractical, in part, because of the project's high density. Also, balconies with views of the surrounding area, including the stadium, may be necessary to interest potential residents and common outdoor activity areas may not be attractive if mostly enclosed by surrounding structures. Therefore, with implementation of these mitigation measures, Impact 3.5-5 would be **significant and unavoidable**.

3.6 PUBLIC SERVICES

This section provides an overview of the following public services for the City of West Sacramento and the project study area: fire protection, police service, public schools, and parks. Impacts are evaluated in relation to increased demand for public services associated with the proposed project and actions needed to provide the services that could potentially lead to physical environmental effects.

3.6.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to public services are applicable to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

No state plans, policies, regulations, or laws related to public services are applicable to the proposed project.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of West Sacramento General Plan

The following policies from the Public Facilities and Services Element of the General Plan pertain to public services and are relevant to the proposed project:

- **Policy A.5:** The City shall ensure the provision of adequate fire-flow rates in all new development.

- **Policy E.3:** The City shall encourage the use of private patrols and security personnel in large residential and commercial developments to supplement police services.

- **Policy F.3:** The City shall attempt to offset the need for new fire department staff and equipment and to improve fire safety by requiring installation of built-in fire suppression equipment in all new development of buildings exceeding 4,000 SF.

- **Policy F.6:** The City shall ensure that fire equipment access is integrated into the design of new facilities.

- **Policy G.4:** The City shall cooperate with the Washington Unified School District in an effort to ensure adequate financing for new school facilities. To this end, the City shall cooperate with the School District in the collection of school facility development fees from new residential and non-residential development. The City shall also work with the Washington Unified School District to identify, establish, and implement additional measures that may be necessary to adequately finance school facilities in the City.

- **Policy I.6:** Emergency access shall be an integral part of the design of all public facilities for the safety of users and workers.

The following policies from the Housing Element of the General Plan pertain to public services and are relevant to the proposed project:

- **Policy E.3:** The City shall ensure that residential developments pay their proportional share of the cost of public facilities and services needed by those developments.

- **Policy E.4:** The City shall ensure that public facilities and services (such as water, sewer, and emergency services) shall be available before occupancy of residential projects.

The following policies from the Health and Safety Element of the General Plan pertain to public services and are relevant to the proposed project:

- **Policy C.1:** The City shall require that new development provides all necessary water service, fire hydrants, and roads consistent with Fire Department Standards.

- **Policy C.2:** The City shall ensure that adequate water fire-flow capability is provided throughout the city and shall regularly monitor fire-flow to ensure adequacy. New development shall comply with the following minimum fire-flow rates: Single-Family Residential – 1,000 gallons per minute (gpm) and Multi-Family Residential - 1,500 gpm. Nonresidential fire flow requirements shall conform to those contained in the 2001 California Fire Code.

- **Policy C.4:** All new development shall be constructed according to fire safety and structural stability standards contained in the latest adopted California Fire and Building Codes and related high-rise regulations.

- **Policy C.7:** In the development review process, the City shall ensure that adequate fire equipment access is provided, and, where appropriate, shall require the use of fire-resistant landscaping and building materials.

- **Policy F.2:** The City shall encourage the use of physical site planning as an effective means of preventing crime. Developers shall design open spaces, parking lots, parks, play areas, and other public spaces so they can be under continuous surveillance by residents. To this end, the Police Department shall participate in the development review process to ensure that crime prevention considerations are incorporated in the design of residential, commercial, industrial, and public facility projects.

- **Policy F.3:** The City shall provide and maintain an adequate level of police equipment and personnel consistent with city growth and development.

The following policies from the Recreational and Cultural Resources Element of the General Plan pertain to public services and are relevant to the proposed project:

- **Policy A.2:** The City shall establish a standard of five acres of parkland, three acres of community park and two acres of neighborhood parks, per 1,000 people, or its equivalent in the context of a park dedication ordinance to be established and periodically updated by the City.

- **Policy A.3:** New development shall be required to assist in meeting the City's park acreage standard as established in an adopted parkland dedication ordinance. To this end, the City shall require of all new development the dedication of land, dedication of improvements, payment of in-lieu fees, or any combination of these determined acceptable by the City, to the maximum extent authorized by law.

Washington Specific Plan

There are no policies in the *Washington Specific Plan* that are relevant to public services issues in the project area.

3.6.2 EXISTING CONDITIONS

FIRE PROTECTION SERVICES

The proposed project site is serviced by the West Sacramento Fire Department. The department service area covers the city and unincorporated areas south of the city boundary between the Sacramento River and the Sacramento Deep Water Ship Channel to approximately the community of Riverview (City of West Sacramento 2005a). The department currently employs 56 sworn firefighters and five civilian personnel. The department responds from four fire stations strategically located throughout the city:

- Station 41 – 132 15th Street,
- Station 42 – 3585 Jefferson Boulevard,
- Station 43 – 1561 Harbor Boulevard, and
- Station 44 – 905 Fremont Boulevard.

The fire department is equipped with four front line fire engines, one ladder truck, one water tender, two wildland engines, two reserve engines, a rescue squad, two rescue boats, and five support vehicles. Additional assistance can be summoned under an automatic aid agreement with the City of Sacramento and mutual aid agreements with other Yolo County fire departments.

The department is organized into three divisions: Emergency Services, Fire Prevention/Hazardous Materials, and Fire Administration. The department responds to fires, medical emergencies, traffic accidents, river rescues, and a variety of other emergency situations.

Fire Station44, which is approximately 1.3 miles from the project site, provides first-response service to the project area. The General Plan identifies a staffing level of 1.5 firefighters to 1,000 population. The General Plan has established a goal for response times of within 5 minutes for 95% of all calls (City of West Sacramento 2004).

POLICE SERVICES

Police services are provided to the project area by the City of West Sacramento Police Department. The police department headquarters is located at 550 Jefferson Boulevard, approximately 1 mile west of the project site. Recently, the police department annexed approximately 3,200 square feet of building space directly behind the main facility (Drummond, pers. comm., 2005).

The department provides a full range of police services to the city and is staffed 24 hours a day, 7 days a week. Officers patrol an area of 23.3 square miles. The department is responsible for patrolling city neighborhoods, responding to calls for service, investigating crime and arresting offenders, and working closely with the community to identify and solve problems of crime and neighborhood disorder. Additional programs are provided to assist residents in making their homes and surrounding areas safe (City of West Sacramento 2003a).

The police department is organized into four offices—administration, support services, criminal investigations, and operations—and consists of three patrol beats (Broderick, Bryte, and old Washington area; middle West Sacramento; and south of the Deep Water Ship Channel). Desired staffing levels identified by the General Plan and police department are 1.5 officers per 1,000 population and two sworn officers per one nonsworn officer to maintain minimum levels of service (City of West Sacramento 2004; Drummond, pers. comm., 2005). The *Washington Specific Plan* identifies a staffing level of two officers per 1,000 population to maintain existing levels of service (City of West Sacramento 1996). Currently, the department staff consists of 67 sworn officers and 32 civilian full-time employees (Drummond, pers. comm., 2005). Other employees include part-time police officers, parking enforcement officers, clerks, reserve police officers, and senior volunteers (City of West Sacramento 2003a).

Response times for the police department are categorized according to the severity of the reported offense or complaint. The department’s target response time for priority 1 calls, constituting a major crime or incident in progress requiring immediate dispatch, is 5 minutes (City of West Sacramento 2003a).

PUBLIC SCHOOLS

The Washington Unified School District (WUSD) provides educational services to the city of West Sacramento and the proposed project area. WUSD has grown from 5,456 students in 1993–1994 to 6,861 students in 2003–2004, an increase of approximately 20%. The district includes eight elementary schools (K–6), one middle school

(7–8), and one high school (9–12). On a district level, the WUSD is operating at or near capacity for its schools, and many schools use temporary relocatable classrooms to expand capacity.

Student yield rates for multifamily residential units in the WUSD service area as of July 2004 are 0.295 for elementary school students, 0.063 for middle school students, and 0.100 for high school students. The WUSD is preparing a districtwide facilities master plan that is expected to be completed by November 2005. Generation yield rates will be analyzed as part of the demographic study for the master plan, and current rates could be adjusted based on the study's results (Jones, pers. comm., 2005).

The elementary school that would serve the Raley's Landing site is Westmore Oaks Elementary School, located at 1504 Fallbrook Street, in the city of West Sacramento, approximately 2.1 miles southwest of the project site (Jones, pers. comm., 2005). Westmore Oaks Elementary School had a student enrollment of 559 students during the 2004–2005 school year (Jones, pers. comm., 2005). This school can accommodate 530 students and is exceeding its capacity by 29 students (Jones, pers. comm., 2005). Middle school students living on the project site would attend Golden State Middle School, and high school students would attend River City High School. Golden State Middle School is located at 1100 Carrie Street, in the city of West Sacramento, approximately 2.2 miles northwest of the project site. This school had a student enrollment of 990 students during the 2004–2005 school year with remaining capacity for an additional 171 students. River City High School, located at 1100 Clarendon Street, in the city of West Sacramento, is approximately 2.0 miles southwest of the project site. Its current enrollment is 1,573 students, and the facility is nearing its expanded capacity (with the aid of portable classrooms) of 1,701 students (Jones, pers. comm., 2005). The exact capacity levels and enrollment figures can change frequently as more portable classrooms are added and additional students enroll in the district.

The WUSD has approved construction of a new comprehensive high school to replace River City High School. The school will be located at the southeast corner of Jefferson Boulevard and Linden Road on approximately 96 acres (approximately 70 acres of which will be needed for the school). It will be constructed to initially house approximately 2,000 students with possible future expansion to 2,400 students. Construction is anticipated to begin in summer 2006, with occupancy in August 2008.

PARKS

The City of West Sacramento Parks and Recreation Department provides recreation and leisure opportunities to the city with its park facilities and recreation programming. According to the *City of West Sacramento Parks Master Plan*, the city has approximately 64 acres of developed parks. Recreational facilities in the project area include River Walk Park, a 7.5-acre park located along the Sacramento River with a portion adjacent to the eastern boundary of the Raley's Landing project site, and Elkhorn Park, a neighborhood park located approximately 1 mile northeast of the site (City of West Sacramento 2003b).

River Walk Park is located along the bank of the Sacramento River between the I Street Bridge and the Tower Bridge, opposite Old Sacramento. It includes picnic tables, walking paths, a levee top promenade, Veteran's Plaza, and Raley's Landing pier. Elkhorn Park, located on the property adjacent to Elkhorn Village Elementary School, was constructed as a result of a partnership between the City and the WUSD. This facility has a soccer field, softball backstop, and picnic tables. It is a practice site for the West Sacramento Soccer Club and the location of the Parks and Recreation youth summer day camp program (City of West Sacramento 2005b). The park is located adjacent to the project site and is accessible to pedestrians from the site.

The City has set standards for the classification of parks in the community through the General Plan and the Parks Master Plan. The City's desired service area ratio is a total of 5 acres of parkland (3 acres of community park and 2 acres of neighborhood parks) per 1,000 people. These plans provide the mechanism for acquiring parkland dedications and provide long-range planning for accommodating the future buildout of the city.

The City uses several methods to finance capital development of neighborhood, community, and regional parks. The predominant method is the Park Impact Fee Program, which collects funds from new development to mitigate the impacts of new residents, workers, and visitors on the City's park and recreation services. The City's expenditures of park impact fees are planned on a 2-fiscal-year cycle as part of the Capital Improvement Program and Budget. The financing requirements for new park facilities are described in the Parks Master Plan.

3.6.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Evaluation of potential public service impacts was based on a review of documents pertaining to the project study area, including the *City of West Sacramento General Plan* and the *Washington Specific Plan;* consultation with appropriate agencies; and field review of the project study site and surroundings. Impacts on public services that would result from implementation of the proposed project were identified by comparing existing service capacity and facilities against future demand associated with project implementation.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on the State CEQA Guidelines. A public service impact is considered significant if implementation of the proposed project would do any of the following:

- result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for:
  - fire protection,
  - police protection,
  - schools,
  - parks, and
  - other public facilities;
- create circumstances under which existing services and facilities could not meet established performance standards (i.e., response times, provider per resident ratios); or
- result in the increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

IMPACT ANALYSIS

IMPACT 3.6-1 Public Services — Increased Demand for Fire Protection Facilities, Systems, Equipment, and Services. *Development of the proposed project would result in increased demand for fire protection facilities, equipment, and services, resulting in the need for additional staff members and equipment to maintain an adequate level of service. This impact is considered* ***significant.***

The project site is located in the service area of the West Sacramento Fire Department. Fire Station44, approximately 1.3 miles from the project site, would provide first-response service to the project area. The General Plan identifies the first-response time goal in the department as 5 minutes for all emergencies, and a staffing level of 1.5 firefighters to 1,000 population. The general plan has established a goal for response times of 5 minutes or less for 95% of all calls (City of West Sacramento 2004). The fire department acknowledges that it is not always able to achieve this goal.

The estimated residential population of the project is approximately 2,026 persons at full buildout (assuming 900 multifamily dwelling units). Fire Station 44 is close enough to the project site (1.3 miles) to maintain the response time goal of 5 minutes or less to the project area. The fire marshal has indicated that the proposed project would increase calls for service by approximately 315 incidents annually (Edgar, pers. comm., 2005). As stated in the General Plan, minimum feasible response times for fire and emergency calls would be maintained through staffing and station locations. Based on existing standards for staffing levels identified by the General Plan and fire department, approximately three firefighters would be required to maintain desired levels of service.

Development of the project would include high-rise residential and office complexes that could require the fire department to acquire new or additional specialized firefighting equipment (e.g., a fire truck equipped to respond to fires in high-rise buildings).

Development of the proposed project would result in increased demand for fire protection facilities and services, resulting in the need for additional staff members and equipment to maintain an adequate level of service. This impact is considered **significant**.

Mitigation Measure 3.6-1: Incorporate Fire Protection and Prevention Measures into Project Planning and Design

The project applicants shall incorporate the following fire protection and prevention measures into project planning and design:

- The City shall determine the appropriate level of fire protection service for the proposed new development, including service standards for comprehensive fire service as appropriate for fire prevention, suppression, inspections, and emergency medical and hazardous materials response, to which the project applicants shall adhere.

- The fire department shall review all plans and designs for consistency with fire department standards before their approval.

- All structures shall be constructed according to fire safety and structural stability standards contained in the latest adopted Uniform Fire Code and Uniform Building Code and any related high-rise regulations (Policy C.3). Emergency access shall be an integral part of the design of all public facilities (Policy I.6). For all commercial buildings, the fire department shall review all building permit applications for consistency with such standards before their approval.

- Before approval of the updated development agreement (DA) for the proposed project, the project applicants, the City, and the fire department shall complete a fire protection services funding agreement. The funding agreement shall identify the equipment needed to provide fire protection services to the proposed project. The full cost of the equipment, and the project applicants' fair share of this cost, shall be determined. Methods to fully fund the acquisition of equipment shall be identified, including fees and other mechanisms. The fire protection services funding agreement shall act as a mechanism to ensure that the project applicants pay an appropriate portion of needed funding, that the City of West Sacramento Fire Department shall provide fire protection equipment to serve the proposed project, and that the City shall ensure the measures in the plan are implemented as scheduled before occupation of project facilities. The fire protection services funding agreement shall be completed and approved by all parties before approval of the DA for the proposed project and shall be included in the DA. Funding for additional fire department personnel shall not be the responsibility of the project applicants. Sufficient funding for ongoing operations, including the cost of additional fire department personnel associated with the proposed project, would be available from property and sales taxes and from pass-through payments from the Redevelopment Agency to the general fund.

- The project applicants shall work with the City of West Sacramento Fire Department to ensure adequate access to and throughout the proposed project. Criteria for the design review process shall include safe pedestrian access, lighting, and emergency service vehicle access.

Verification that these measures have been implemented shall be reviewed and approved by the City's Community Development director before approval of planning entitlements, design review approvals, and/or issuance of building permits to ensure incorporation of design criteria and ensure adequate levels of staffing, equipment, and funding.

With implementation of this mitigation measure, the increased demand for fire protection facilities, equipment, and services associated with the proposed project would be met; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.6-2	Public Services — Increased Demand for Fire Flow. *The proposed project would include the development of residential, commercial, and other uses that would require adequate available water flow for fire suppression (fire flow). Lack of adequate fire flow would impede the ability of the City of West Sacramento Fire Department to provide effective fire suppression at the project site. This impact is considered **significant**.*

The West Sacramento Fire Department maintains oversight authority to ensure that adequate water volume and pressure are available in the department's service area. Methods to calculate minimum fire flow involve design-specific calculations, including the density of structures, height, number of stories, square footage, building materials, and structural design. Generally, fire flow requirements for multifamily residential development are approximately 1,500 gallons per minute (measured at 20 pounds per square inch) with a minimum 2-hour duration. Fire flow requirements may be greater in areas where multiple-story structures and/or commercial and office buildings could be constructed. Lack of adequate fire flow would impede the ability of the City of West Sacramento Fire Department to provide effective fire suppression at the project site and would be considered a **significant** impact.

Mitigation Measure 3.6-2: Meet Minimum Fire Flow Requirements

The City shall not authorize the occupancy of any structures until the project applicants have confirmed the provision of fire flows as required by the City of West Sacramento Fire Department and the California Fire Code. Sufficient water supply and delivery infrastructure are available to provide required fire flows to the project site based on implementation of water conveyance and storage facility performance criteria included in the 2005 Water Master Plan Update for the City of West Sacramento (see Section 3.7, "Public Utilities"). Nonresidential fire flow requirements shall conform to those contained in the 2001 California Fire Code.

With implementation of this mitigation measure, the increased demand for fire flow associated with the proposed project would be met; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.6-3	Public Services — Increased Demand for Police Protection Facilities, Services, and Equipment. *Development of the proposed project would increase the demand for police protection facilities and services, resulting in the need for additional staff members and equipment to maintain an adequate level of service. This impact is considered **significant**.*

Police services would be provided to the proposed project site by the City of West Sacramento Police Department. The police department headquarters is located approximately 1 mile west of the project site. Desired staffing levels identified by the police department are 1.5 officers per 1,000 population and two sworn officers per one nonsworn officer. The *Washington Specific Plan* identifies a staffing level of two officers per 1,000 population.

The estimated residential population of the project is approximately 2,026 persons at full buildout (assuming 900 dwelling units). As stated in the General Plan, minimum feasible police response times for police calls would be maintained through staffing and patrol arrangements to projected populations. Based on existing standards for staffing levels identified by the City of West Sacramento Police Department, approximately three sworn officers and 1.5 nonsworn officers would be required to maintain minimum levels of service. On the basis of staffing levels identified in the *Washington Specific Plan*, approximately four sworn officers would be considered adequate to maintain existing levels of service.

The proposed project would increase the demand for police protection facilities and services, resulting in the need for additional staff members and equipment to maintain an adequate level of service. This impact is considered **significant**.

Mitigation Measure 3.6-3: Incorporate Police Protection and Crime Prevention Measures into Project Planning and Design

The project applicants shall incorporate the following police protection and crime prevention measures into project planning and design:

- The City shall determine the appropriate level for police protection services, including the required number of officers, support staff members, and associated equipment and vehicles, to provide service to the proposed development.

- Before approval of the updated DA for the proposed project, the project applicants, the City, and the police department shall complete a police protection services funding agreement. The funding agreement shall identify the equipment needed to provide police protection services to the proposed project. The full cost of the equipment, and the project applicants' fair share of this cost, shall be determined. Methods to fully fund the acquisition of equipment shall be identified, including fees and other mechanisms. The police protection services funding agreement shall act as a mechanism to ensure that the project applicants pay an appropriate portion of needed funding, that the City of West Sacramento Police Department shall provide police protection equipment to serve the proposed project, and that the City shall ensure the measures in the plan are implemented as scheduled before occupation of project facilities. The police protection services funding agreement shall be completed and approved by all parties before approval of the DA for the proposed project and shall be included in the DA. Funding for additional police department personnel shall not be the responsibility of the project applicants. Sufficient funding for ongoing operations, including the cost of additional police department personnel associated with the proposed project, would be available from property and sales taxes and from pass-through payments from the Redevelopment Agency to the general fund.

- The project applicants shall coordinate with the City of West Sacramento Police Department during the planning stage to ensure the use of design features, such as alarms and lighting, to reduce police service demands.

- The project applicants shall provide private security service and security personnel for residential and commercial development construction sites.

- The project applicants shall work with the City of West Sacramento Police Department to ensure adequate access for security purposes to and throughout the proposed project. Criteria for the design review process shall include safe pedestrian access, lighting, and emergency service vehicle access.

Verification that these measures have been implemented shall be reviewed and approved by the City's Community Development director before approval of planning entitlements, design review approvals, and/or issuance of building permits to ensure incorporation of design criteria and ensure adequate levels of police staffing, equipment, and funding.

With implementation of this mitigation measure, the increased demand for police facilities, services, and equipment associated with the proposed project would be met; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.6-4 **Public Services — Increased Demand for Public School Facilities and Services.** *Implementation of the proposed project would increase demand for elementary schools (K–6), middle schools (7–8), and high schools (9–12) in the WUSD service area. Elementary, middle, and high schools in the project area have sufficient available capacity to meet projected demand throughout project development. In addition, the project applicant would pay the state-mandated school impact fees to the WUSD to mitigate impacts on schools. Therefore, this impact is considered* ***less than significant****.*

The project site is located in the WUSD service area. Enrollment at nearby schools includes 559 students at Westmore Oaks Elementary School, 990 students at Golden State Middle School, and 1,573 students at River City High School. On the basis of student generation rates for the WUSD, the proposed housing (900 multifamily residential units) is expected to generate approximately 266 elementary school students (K–6), approximately 57 middle school students (7–8), and approximately 90 high school students (9–12).

Westmore Oaks Elementary School is exceeding its capacity by 29 students and would likely not have the capacity for the students generated by the project. Students generated by the proposed project could attend other nearby schools that have additional capacity. These include Elkhorn Village Elementary School (1.1 miles northwest of the proposed project site), which could accommodate approximately 40 students; Bryte Elementary (2 miles northwest of the proposed project site), which could accommodate approximately 12 students; and A. Norman Elementary (2 miles northwest of the proposed project site), which could accommodate approximately 95 students. Golden State Middle School has remaining capacity for 171 students and would be able to accommodate the 57 middle school students generated by the proposed project. River City High School would be able to accommodate the estimated 90 high school students generated by the proposed project; however, the high school is nearing its expanded capacity. Construction of a new comprehensive high school to replace River City High School has been approved. The new school will initially house approximately 2,000 students with possible future expansion to 2,400 students. Construction is anticipated to begin in spring 2006, with occupancy in August 2008, and the new high school would have capacity to accommodate students from new development.

Elementary schools in the project area would have an approximate capacity for 147 students, and approximately 119 elementary school students (grades K–5) generated by the proposed project would not be accommodated by these facilities. Middle and high schools in the project vicinity would have sufficient capacity to meet the demands of the project and would not result in a shortfall of school services or facilities for middle school or high school students. As required by state law, the project applicants would pay the state-mandated school impact fees to the WUSD to mitigate impacts on schools. Payment of the fees would be required upon submittal of the building permit. Although this fee typically is insufficient to fund 100% of new school facility construction and operation, the California State Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. With payment of the state-mandated school impact fees, the proposed project would have a **less-than-significant** impact on services and facilities.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.6-5 **Public Services — Increased Demand for Recreational Facilities.** *The development of the proposed project would increase the number of residents and employees in the project vicinity, thereby increasing the use and potential physical deterioration of recreational facilities in the area. This impact is considered* ***significant****.*

Implementing the proposed project would increase the population by an estimated 2,026 residents at full buildout. As described above, the General Plan and Parks Master Plan standard for parklands is 2 acres of neighborhood park and 3 acres of community park per 1,000 residents. To meet this park facility standard, the proposed development would be required to provide 4.05 acres of neighborhood park and 6.08 acres of community park. At this time, no open space areas associated with the proposed project have been accepted by the City as qualifying as neighborhood or community park facilities; therefore, the proposed project would not meet the City's desired service-area ratio.

Implementing the proposed project would increase the number of residents and employees in the project vicinity, thereby increasing the use and potential physical deterioration of recreational facilities in the area. Therefore, this impact is considered **significant**.

Mitigation Measure 3.6-5: Comply with Park Impact Fee Program Requirements

As described in the Park Impact Fee Program, the project applicants shall be required to dedicate land, dedicate improvements, pay in-lieu fees, or perform any combination of these requirements determined acceptable by the City. This mitigation measure shall be implemented in accordance with the Parks Master Plan, the City's Park Impact Fee Program, and the Capital Improvement Program. Consistent with these plans and programs, the City is planning to extend the River Walk Park northward to the I Street Bridge during 2007. The City is also designing a recreational trail from the I Street Bridge to the Broderick Boat Ramp, and a waterfront promenade from Tower Bridge through the Triangle Specific Plan area. Although no specific time frame has been set to build the recreational trail to the boat ramp, the City's adopted 2005–2007 Capitol Improvement Program anticipates construction of the Riverfront Promenade during 2008. Because of the proximity to the Raley's Landing project site, existing and new park areas associated with River Walk Park and the Riverfront Promenade would be expected to directly serve demand for regional parks generated by the proposed project.

Regarding neighborhood facilities, the Park Impact Fee Program is intended to ensure provision of facilities to meet new demand for neighborhood park amenities generated by the proposed project. New neighborhood park facilities may be constructed in the vicinity of the project site or other location(s) consistent with the Parks Master Plan. Given recent rapid escalation in parkland and construction costs, the City may be required to update the Park Impact Fee Program to keep pace with park development costs. The project applicants would be required to comply with program requirements applicable at the time this mitigation measure is implemented.

With implementation of this mitigation measure, the project would meet the City's requirements regarding new park facilities; therefore, this impact would be reduced to **less than significant**.

3.7 PUBLIC UTILITIES

This section provides an overview of the following public utilities for the City of West Sacramento and the project study area: water supply, wastewater service, solid waste management, electrical service, and natural gas service. Impacts are evaluated in relation to increased demand for public utilities associated with the proposed project and actions needed to provide the services that could potentially lead to physical environmental effects. Stormwater management is addressed in Section 3.10, "Hydrology and Water Quality."

3.7.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to public utilities are applicable to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Senate Bill 610

Senate Bill (SB) 610 (Section 21151.9 of the Public Resources Code, Section 10910 et seq. of the Water Code) was passed in 2001 and requires the preparation of water supply assessments for large developments (i.e., more than 500 dwelling units or nonresidential equivalent), such as the Raley's Landing project. These assessments, prepared by public water systems responsible for serving project areas (here, the City itself), address whether existing and projected water supplies are adequate to serve the projects while also meeting existing urban and agricultural demands and the needs of other anticipated development in the service area in which the project is located. Where a water supply assessment concludes that insufficient supplies are available, the assessment must lay out the steps that would be required to obtain the necessary supply. The content requirements for the assessment include, but are not limited to, identification of the existing and future water suppliers and quantification of water demand and supply by source in 5-year increments over a 20-year period. This information must be provided for average normal, single-dry, and multiple-dry years. The results of the water supply assessment must be presented in the CEQA review for the project triggering the assessment. The absence of an adequate current water supply does not preclude project approval, but it does require a lead agency to address a water supply shortfall in its project approval findings.

Senate Bill 221

In 2001, the California Legislature passed Senate Bill (SB) 221 concurrently with SB 610 to ensure that local agencies have sufficient information about the availability of water supplies when they decide whether to approve projects. Both bills created a stronger link between new development and the water supply for the new development. SB 221 (Section 66473.7 of the Government Code) is related to the approval of subdivision maps, not to the CEQA process. It requires the legislative body with authority to approve the tentative map to obtain written verification of sufficient water supply for proposed residential development of more than 500 units if the public water system would have at least 5,000 service connections and for proposed residential development that would increase by 10% or more the number of the public water system's existing service connections if the system has fewer than 5,000 connections. The verification must be provided before the final subdivision map for the project is approved. The agency cannot approve the final map without this verification.

This section of the Government Code does not apply to any residential project proposed for a site that is in an urbanized area and has been previously developed for urban uses, or where the immediate contiguous properties surrounding the residential project site are, or previously have been, developed for urban uses, or to housing projects that are exclusively for very low and low-income households.

The determination of sufficiency is required to consider the availability of water supplies over a historical record of at least 20 years; the applicability of an urban water shortage contingency analysis prepared pursuant to Section 10632 of the Water Code that includes actions to be undertaken by the public water system in response to water supply shortages; the reduction in water supply allocated to a specific water use sector pursuant to a resolution or ordinance adopted, or a contract entered into, by the public water system; and the amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer.

The written verification must provide evidentiary proof of the water supply. In most cases, the water supply assessment prepared under SB 610 would meet that requirement.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation (e.g., incineration, distillation, gasification, or biological conversion other than composting) and land disposal, the state legislature passed the California Integrated Waste Management Act (CIWMA) of 1989 (AB 939), effective January 1990. According to the CIWMA, all cities and counties were required to divert 25% of all solid waste from landfill facilities by January 1, 1995, and 50% by January 1, 2000. Each city is required to develop solid waste plans demonstrating integration with the CIWMA plan and the applicable county plan. The plans must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of West Sacramento General Plan

The following policies from the Housing Element of the General Plan pertain to public utilities and are relevant to the proposed project:

- **Policy C.1:** The City shall encourage the use of energy conservation features in residential construction that comply with state building standards and the design of new residential development that uses the latest energy efficiency technology.
- **Policy E.3:** The City shall ensure that residential developments pay their proportional share of the cost of public facilities and services needed by those developments.
- **Policy E.4:** The City shall ensure that public facilities and services (such as water, sewer, and emergency services) shall be available before occupancy of residential projects.

The following policies from the Public Facilities and Services Element of the General Plan pertain to public utilities and are relevant to the proposed project:

- **Policy A.3:** To minimize the need for the development of new water sources and facilities and to minimize sewer flows, the City shall promote water conservation both in City operations and in private development.
- **Policy A.7:** The City shall, through a combination of water development fees and other funding mechanisms, ensure that new development pays its fair share of the costs of water system improvements.
- **Policy B.4:** The City shall, through a combination of sewer development fees and other funding mechanisms, ensure that new development pays its fair share of the costs of sewer system improvements.
- **Policy D.1:** The City shall study and actively pursue methods of solid waste recycling and reuse, including source separation, with the goal of reducing its solid waste generation by 50% by the year 2000. Recycling methods that involve the production of energy shall be considered.
- **Policy I.3:** The City shall require that all new electrical and communications facilities are installed underground or, in the case of transformers, pad-mounted. The City shall actively promote the undergrounding of existing overhead facilities.

Washington Specific Plan

There are no policies in the *Washington Specific Plan* that are relevant to public utilities issues in the project area.

Raley's Landing Development Agreement

The Raley's Landing Development Agreement, dated January 12, 1996, for reference purposes and executed on February 1, 1996, addresses an area along the West Sacramento riverfront that includes the River 1, 2, and 3 areas. Article 5 of the development agreement, "Obligation of the Parties," guarantees certain levels of sewer and water service to the project.

3.7.2 EXISTING CONDITIONS

WATER SUPPLY AND DISTRIBUTION

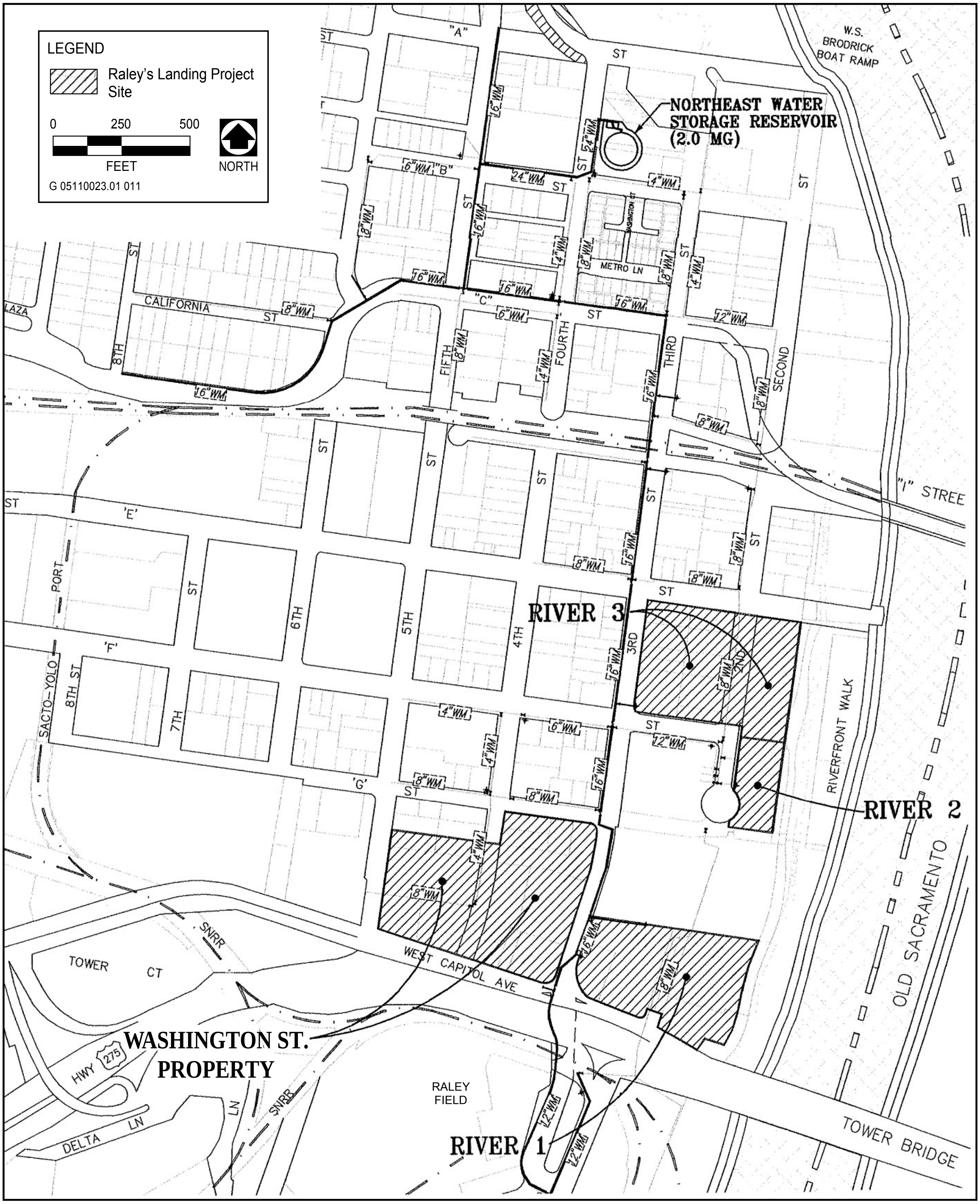
The majority of the city is located within the boundaries of the North Delta Water Agency (NDWA). Water supplies for these sections of the city are guaranteed by the contract between the NDWA and the State of California. The remainder of the City receives surface water from the Sacramento River under two entitlements: an appropriative water right (Permit #18150) issued to the City by the State Water Resources Control Board and a 40-year contract with the U.S. Bureau of Reclamation for delivery of Central Valley Project (CVP) supplies. According to the terms of this 40-year contract (W0187), the City is allowed to divert up to a combined average of 23,600 acre-feet per year (afy) (21.1 million gallons per day [mgd]) of Sacramento River water under its appropriative right (Permit #18150) and CVP water. However, the City's surface water supply is assured under the NDWA contract even if its appropriative rights and CVP contract deliveries are reduced. The City may divert as much Sacramento River water as needed to reasonably serve the portions of the city in the NDWA boundaries. The City maintains and operates five groundwater wells; however, because of poor water quality in these wells, the City has made a decision to discontinue the use of groundwater and formally abandon these wells.

The Bryte Bend Water Treatment Plant diverts water from the Sacramento River at the plant's intake structure and provides the main source of treated water supply for the city. The capacity of the treatment plant is 40 mgd (November through March) or 58 mgd (April through October). The Bryte Bend Water Treatment Plant currently has six distribution system storage reservoirs and two clearwells. Average daily water usage in the city is approximately 13 mgd, with a peak summer use of 24 mgd (Carollo Engineers 2005).

In the project study area, a 16-inch-diameter water line parallels Third Street and extends to the Northeast Water Storage Reservoir at B Street and Fifth Street. Additional 4-, 6-, and 8-inch distribution lines parallel West Capitol Avenue, G Street, and Fourth Street (in the vicinity of the River 1 area and the Washington Street property) and E Street, F Street, and Second Street (in the vicinity of the River 2 and 3 areas) (City of West Sacramento 1996). Exhibit 3.7-1 shows existing water infrastructure in the proposed project area.

Water Master Plan Update

The Water Master Plan, originally prepared in 1994 and updated in 2005, evaluates the existing water supply system, defines required improvements, and proposes new infrastructure to support the City's projected growth. It also identifies performance criteria for the water distribution system, water supply capacity, and water storage facilities. Water supply and delivery infrastructure serving the Raley's Landing project would be required to comply with the performance criteria listed in the plan. The performance criteria identified in the master plan are used to evaluate the adequacy of the existing water supply and distribution system and provide the basis for developing improvements necessary to provide effective service. Table 3.7-1 summarizes the performance criteria found in the 2005 Water Master Plan Update.



Source: Murray Smith & Associates 2005

Existing Water Infrastructure **Exhibit 3.7-1**

Table 3.7-1 2005 Water Master Plan Update Water Conveyance and Storage Facilities Performance Criteria	
Water Distribution	Normal Operation: Service pressure within the City's distribution system shall be maintained between a maximum of 60 pounds per square inch (psi) and a minimum of 40 psi. Velocity within the distribution system pipelines shall be limited to 5 feet per second (fps). Maximum Day Demand with a Fire or Simultaneous Fires: Maximum velocity within distribution system pipelines shall be 10 fps. Operations shall attempt to maintain maximum pipe velocities within a desirable range of 4.0 to 7.0 fps. System pressure in the vicinity of a fire shall be maintained at 20 psi or greater. Peak-Hour Demand: Maximum distribution system pipeline velocity shall be 7.0 fps or less. System pressure shall be maintained at 30 psi or greater.
Water Supply Capacity	Maximum Day Demand: Total production capacity of surface water facilities shall be equal to or greater than the maximum day demand. Maximum Day Demand Plus Fire Flow: Water supply system(s) shall have the capability to meet a maximum day demand plus fire flow with the largest high lift pump out of service. Peak-Hour Demand: Peak-hour demand shall be met from pumps at the surface water facilities, supplemented by pumping facilities at storage reservoirs within the distribution system.
Water Storage Criteria	Operational Storage: Storage to meet diurnal peaks equivalent to at least 25% of the maximum day demand. Fire Storage: The fire flow requirement is 8,000 gpm for a duration of five hours for nonsprinkled facilities. Storage to provide a fire flow equivalent to the maximum fire flow in the service area times the duration the flow rate must be maintained. Emergency Storage: Storage equivalent to 50% of the maximum day demand to ensure water during periods when normal supply is interrupted.
Source: Carollo Engineers 2005	

WASTEWATER SERVICE

In the city of West Sacramento, wastewater collection and treatment services for all residential and commercial development are provided by the City of West Sacramento (City) through a network of pipelines, lift stations, and the City of West Sacramento Wastewater Treatment Plant (WWTP). The treatment plant is located north of the Deep Water Ship Channel, on South River Road. Currently, wastewater receives secondary treatment at the plant, which is then discharged to the Sacramento River south of Clarksburg under an existing Regional Water Quality Control Board discharge permit. The City of West Sacramento WWTP has a flow capacity of 7.5 mgd. Peak daily flow is approximately 5.7 mgd.

The city was recently annexed to the Sacramento Regional County Sanitation District (SRCSD), which is responsible for interceptor collection (sanitary sewers that are designed to carry flows in excess of 10 mgd) and wastewater treatment. As part of Sacramento County's approved Lower Northwest Interceptor (LNWI) project, a pipeline will be installed that connects West Sacramento to the Sacramento Regional Wastewater Treatment Plant (SRWTP). This will provide 47 mgd of flow capacity for West Sacramento, beginning in approximately 2007. Following connection with the LNWI project, the City of West Sacramento WWTP will be decommissioned.

Existing sewer trunk lines in the vicinity of the Raley's Landing project range from 6- to 21-inch gravity collection lines. A 12-inch collection line parallels G Street, and Third Street in the project area. Wastewater from the proposed project would be delivered to the Jefferson Pump Station through a 24-inch gravity line and then would be pumped through an 18-inch force main to the wastewater treatment plant. The Jefferson Pump Station has a maximum reliable capacity of 5.6 mgd. Currently, the pump station receives 0.8 mgd of average dry weather flow and 3.2 mgd of peak wet weather flow (Murray Smith & Associates 2005). Exhibit 3.7-2 shows the existing sewer infrastructure in the proposed project area.

SOLID WASTE MANAGEMENT

The City of West Sacramento Refuse and Recycling Division is responsible for administering a contract with a private hauler to collect and dispose of solid waste generated by residential and commercial customers. Solid waste is disposed of at the Yolo County Central Landfill, which is located southeast of the city of Woodland, off County Road 28H, near the intersection of County Road 104. It is 15 miles away from the city of West Sacramento. The site is operated as a Class III sanitary landfill and incorporates source separation resource recovery facilities. The landfill has approximately 16 million cubic yards of capacity remaining and is expected to remain open until 2021 (CIWMB 2004a).

AB 939 requires local agencies to implement source reduction, recycling, and composting programs (see discussion under “Regulatory Framework”). The Yolo County Integrated Waste Management Plan requires recycling programs, which are expected to result in a 50% diversion away from landfills, thereby extending the life of landfills.

ELECTRICAL SERVICE

Pacific Gas and Electric Company

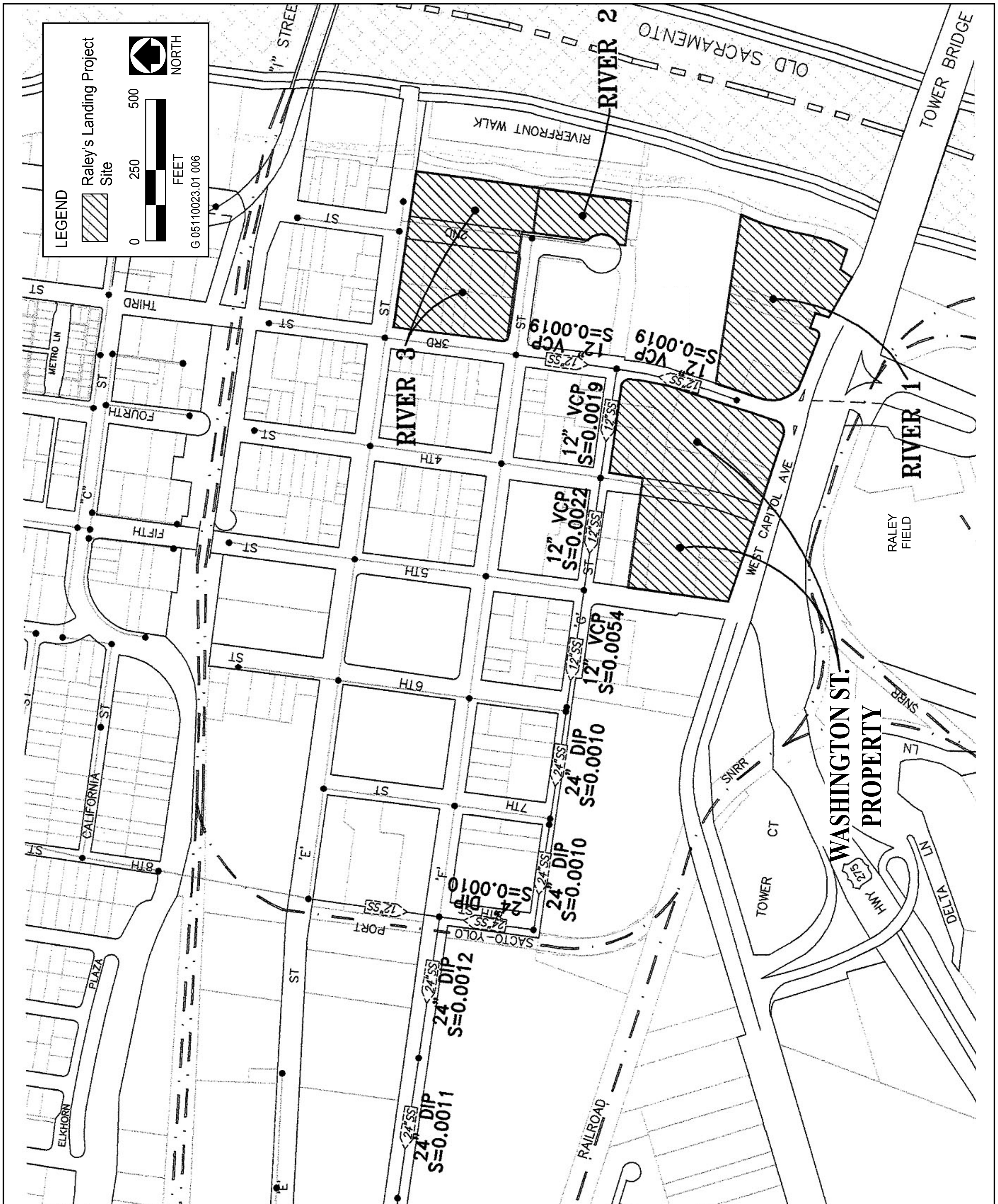
Pacific Gas and Electric Company (PG&E) is responsible for providing electricity to the city of West Sacramento, including the Raley’s Landing project site. PG&E delivers approximately 81,923 million kilowatt-hours (kWh) of electricity to its 13 million customers throughout the 70,000-square-mile service area in northern and central California.

Existing electrical transmission lines supplying the West Sacramento area consist of two 115-kilovolt (kV) source lines and one 115-kV line interconnecting the area with an adjacent load area. This transmission system supplies two distribution substations in West Sacramento: the West Sacramento substation, located at Harbor Boulevard and Reed Avenue, and the Deepwater substation, located west of Summerfield Drive in Southport, adjacent to the Southport Industrial Park.

Aboveground and belowground electrical lines are in the vicinity of the project site. These lines parallel existing road rights-of-way and provide electricity to the Ziggurat building, the River Walk Park area, and street lights along roadways. The proposed project would connect to these existing lines and new onsite infrastructure would be installed underground.

Sacramento Municipal Utility District

The Sacramento Municipal Utility District (SMUD) provides electricity within a service area that encompasses Sacramento County and a small part of Placer County. Elected officials in West Sacramento, Davis, and Woodland approached the SMUD Board of Directors in 2003 and expressed a desire to become part of the SMUD service territory. An independent study to measure the costs and benefits of joining SMUD found that SMUD could provide service to east Yolo County customers at a savings compared to the cost of existing service supplied by PG&E. The city councils of all three cities and Yolo County supervisors voted unanimously to ask SMUD for annexation. SMUD performed its own detailed analysis and found results similar to those of the earlier study.



Source Murray Smith & Associates 2005

Existing Sewer Infrastructure **Exhibit 3.7-2**

The SMUD Board of Directors voted to pursue granting the annexation request of the Cities of West Sacramento, Davis, Woodland and the areas between these communities. A formal application to the Sacramento Local Agency Formation Commission (LAFCo) was submitted on August 1, 2005. LAFCo will have to approve the annexation proposal before residents of the annexation area would vote on the proposed annexation. LAFCo will hold public hearings and conduct an independent review of the application. If the commission approves the application, residents of the proposed annexation area could vote as early as November 2006 on whether they want SMUD to provide their electric service.

If voters approve the annexation, SMUD and PG&E would negotiate a valve for existing PG&E-owned power lines, poles, substations, and other equipment and infrastructure in the proposed annexation area for purchase by SMUD. It is anticipated that if all necessary approvals are received, SMUD would begin serving the annexation area in approximately October 2008 (Sacramento Municipal Utility District 2005a).

SMUD is the nation's sixth largest community-owned electric utility in terms of customers served, with approximately 560,000 customers. Its record peak demand of 2,959 megawatts was set in July 2005 (Sacramento Municipal Utility District 2005b). As described in the annexation application, the results of the studies performed to analyze the annexation show that the annexation is technically feasible, economical, and practical. They also demonstrate that SMUD could extend service to the annexation territory, including the Raley's Landing project site, without diminishing current service and reliability levels to its existing customers (Sacramento Municipal Utility District 2005b).

NATURAL GAS SERVICE

Natural gas service would be provided to the Raley's Landing project site by PG&E. Gas is delivered to the city and the proposed project area through portions of PG&E's 46,000 miles of natural gas pipelines. Natural gas is conveyed through the West Sacramento area via three 16-inch and one 12-inch major transmission lines. The Winchester Lakes gas field is located approximately 4 miles south of the city and has been in production since 1978. Gas from this source is dehydrated and odorized at the wellhead before being mixed with gas in lines flowing east to the city of West Sacramento. All construction and maintenance activities for natural gas facilities are the responsibility of PG&E.

Natural gas lines are in the vicinity of the project site, and these lines parallel existing road rights-of-way. Natural gas is provided to the Ziggurat building, adjacent to the project site. The proposed project would connect to existing gas lines and new on-site infrastructure would be installed on-site.

3.7.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Impacts on utilities that would result from the project were identified by comparing existing service capacity and facilities and infrastructure against future demand associated with project implementation. When possible, a quantitative comparison was used to determine impacts of the proposed project on future demands. Evaluation of potential public utility impacts was based on a review of documents pertaining to the project study area, including the *City of West Sacramento General Plan*, the *Washington Specific Plan*, the Riverfront Master Plan, the 2005 Water Master Plan Update, and the Raley's Landing Utility Study (Murray Smith & Associates 2005); consultation with appropriate agencies; and field review of the project study site and surroundings.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on the State CEQA Guidelines. A public utilities impact is considered significant if implementation of the proposed project would do any of the following:

- create demand for wastewater treatment/disposal beyond available service capacity;
- create demand for electrical or natural gas service that is substantial in relation to the existing demands;
- result in noncompliance with wastewater treatment requirements of the Central Valley Regional Water Quality Control Board;
- require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- have insufficient water supplies available to serve the project from existing or permitted entitlements and resources, or require new or expanded entitlements;
- result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- generate solid waste beyond the capacity of existing landfills; or
- violate federal, state, or local statues and regulations related to solid waste.

IMPACT ANALYSIS

IMPACT 3.7-1 Public Utilities — Increased Demand for Water Supply and Treatment Capacity. *Implementation of the proposed project would increase demand on the existing water supply available to the City of West Sacramento and on the City's existing water treatment capacity. The City is currently capable of meeting the project demands for water supply and treatment. Therefore, this impact is considered* **less than significant***.*

The General Plan Background Report provides the average daily water demand based on land uses in the city. Table 3.7-2 summarizes the project's estimated water demand by proposed land uses. The table assumes development of 850 residential units and the hotel because this scenario would have a greater demand on water supply than development of 900 residential units and no hotel. A conservative approach was used in calculating the water demand of the hotel, and it was assumed that water demand for each hotel room would be equivalent to one multifamily residential dwelling unit.

Table 3.7-2
Estimated Water Demand for the Proposed Raley's Landing Project

Land Use	Dwelling Units	Acres	Unit Demand Factor	Total Water Demand (gpd)
Multifamily residential	850	0	290 gpd/du	246,500
Hotel	300		290 gpd/du	87,000
Commercial/office[1]	0	22.1[2]	2,950 gpd/ac	65,195
			Project total	**398,695**

Notes: gpd/ac = gallons per day per acre; gpd/du = gallons per day per dwelling unit.
1 The commercial/office land use includes the 15,000-sf conference center.
2 Approximate acreage based on proposed square footage proposed for commercial and office land uses.
Source: City of West Sacramento 2000

As shown, the total water demand for the proposed project is estimated to be 398,695 gpd, or 0.40 mgd. The proposed project would increase water demand by roughly 3% over the City's current average daily water use and would represent approximately 1% of the City's current surplus assured supply. For average daily water use, the project would not result in a significant impact because the project is within the NDWA boundaries and water supply is assured to portions of the city in these boundaries.

The capacity of the Bryte Bend Water Treatment Plant is currently 40 mgd (November through March) or 58 mgd (April through October). Average daily water usage in the city is approximately 13 mgd, with a peak summer use of 24 mgd. The proposed project would require an estimated 0.40 mgd of water treatment; therefore, the proposed project would not exceed the plant's permitted capacity.

An SB 610 water supply assessment has been prepared to determine whether the projected water supplies available would meet the water demand associated with the proposed project, in addition to the existing and planned future uses. As described in the SB 610 assessment, future water supplies would be adequate to meet the water demands of the Raley's Landing project (Appendix F).

Based on the estimated water demand for the project, available water supply, the city's current water treatment capacity, and the SB 610 water supply assessment, the project's water supply and water treatment facilities impacts would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.7-2 — Public Utilities — Increased Demand for Water Conveyance and Storage Facilities. *Implementation of the proposed project would result in a need for new on-site water conveyance facilities but no off-site improvements other than connections to existing water transmission lines in adjacent streets. On-site infrastructure would be designed per the standard specifications for the City and per the 2005 Water Master Plan Update. Therefore, this impact is considered* less than significant*.*

The 16-inch water transmission line running through Third Street and the Northeast Water Storage Reservoir at Fifth and B Streets would be used to deliver potable water to the project site. A utility study was conducted for the Raley's Landing project to determine, in part, the adequacy of existing water infrastructure facilities and identify potential off-site improvements necessary to develop the proposed project (Murray Smith & Associates 2005). According to the utility report, the existing 16-inch line is consistent with the size required for buildout of the project area, and the Northeast Water Storage Reservoir would have storage capacity sufficient to serve the proposed project. No off-site water facility improvements would be necessary for development of the Raley's Landing project.

On-site water infrastructure would be required for the proposed project to connect to the existing water transmission pipeline. The project applicant is required to perform a detailed analysis of on-site infrastructure needs to determine the distribution facilities required to serve the proposed project. To ensure that the water infrastructure needed for the proposed project is adequately designed and sized, water conveyance facilities would be designed per the 2005 Water Master Plan Update design criteria and performance standards summarized in Table 3.7-1 above and as deemed appropriate by the City. The location of pipelines would be identified in the final project design and would be sized to meet demands of the project. The ultimate configuration would be reviewed and approved by the City of West Sacramento Community Development Department. As specified in the *Washington Specific Plan*, the project applicant would be responsible for funding and construction of all on-site water transmission pipelines.

Because there would be adequate on-site and off-site water delivery infrastructure to serve the proposed project, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.7-3 **Public Utilities — Increased Demand for Wastewater Conveyance Facilities.** *Implementation of the proposed project would increase demand for wastewater conveyance facilities, but demand would not exceed existing capacity. Existing infrastructure and the Jefferson Pump Station have capacity sufficient to serve the proposed project. On-site infrastructure would be designed per the standard specifications for the City. Therefore, this impact is considered* ***less than significant****.*

Flows for the Raley's Landing project have been calculated using rates from the City of West Sacramento Wastewater Master Plan Update. Table 3.7-3 summarizes the project's estimated wastewater flow by proposed land uses. The table assumes development of 850 residential units and a hotel because this scenario would have a greater demand on wastewater infrastructure than development of 900 residential units and no hotel.

Table 3.7-3
Estimated Wastewater Flow for the Proposed Raley's Landing Project

Proposed Land Use	Area	Gallons per 1,000 sf	Gallons per Room	Gallons per Unit	Gallons per Acre	Total Gallons	
						Average Flow	Peak Flow[1]
Multifamily residential	850 units	--	--	225	--	191,250	573,750
Retail/commercial	102,000 sf	--	--	--	1,500	50,700	152,100
Office	845,000 sf	60	--	--	--	3,512	10,536
Hotel	300 rooms	--	100	--	--	30,000	90,000
Conference center	15,000 sf	100	--	--	--	1,500	4,500
					Project total	**276,962 gpd**	**830,886 gpd**

Note: sf = square feet

[1] Peak flow was calculated using three times the average flow (City of West Sacramento2004).

Source: Murray Smith & Associates 2005

Based on land uses, the average daily dry weather flow calculated for the proposed project would be 276,962 gpd (0.28 mgd), and the peak wet weather flow would be 830,886 gpd (0.83 mgd). A utility study was conducted for the Raley's Landing project to determine, in part, the adequacy of existing sewer infrastructure facilities and potential off-site improvements necessary to develop the proposed project (Murray Smith & Associates 2005). Estimated average daily flow for the Raley's Landing project (0.28 mgd) was added to measured average daily flow data obtained during 2002 from the four monitoring sites in the project area. The analysis conducted for the utility study determined that existing backbone sewer infrastructure had adequate capacity to serve the proposed project, and no off-site sewer infrastructure improvements would be necessary.

Currently, the Jefferson Pump Station receives 0.8 mgd of average dry weather flow and 3.2 mgd of peak wet weather flow. Combined with the proposed project flow, the pump station would receive a total of 1.08 mgd of average dry weather flow and 4.03 mgd of peak wet weather flow. The pump station has a maximum reliable capacity of 5.6 mgd, and additional flow from the proposed project would not exceed the maximum reliable capacity. No improvements to the pump station would be required for development of the Raley's Landing project.

On-site wastewater conveyance facilities would be required to connect the proposed project into existing sewer lines in nearby streets. The specific extent of on-site infrastructure is not known at this time; however, the project applicant is required to perform a detailed analysis to determine the on-site conveyance facilities required to serve the proposed project. To ensure that the wastewater infrastructure needed for the proposed project is adequately designed and sized, on-site wastewater conveyance facilities would be designed per the standard specifications for the city. The conveyance system would be designed to minimize infiltration and inflow. The location of pipelines would be identified in the final project design and sized to meet demands of the project. The ultimate configuration would be reviewed and approved by the City of West Sacramento Community Development Department. As specified in the *Washington Specific Plan*, the project applicant would be responsible for funding and construction of all on-site wastewater conveyance facilities.

Because there would be adequate on-site and off-site wastewater conveyance infrastructure to serve the proposed project, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.7-4 **Public Utilities — Increased Demand for Wastewater Treatment Facilities.** *In the short term, implementation of the proposed project would increase demand at the City's wastewater treatment facility, but demand would not exceed existing capacity. In the long term, wastewater treatment for the city would be provided by the SRWTP. Because the proposed project would consume some of the existing excess capacity at the SRTWP, the proposed project ultimately would contribute to the need for expansion of the SRWTP. This impact is considered* ***significant****.*

The average daily dry weather flow calculated for the proposed project would be 276,962 gpd (0.28 mgd), and the peak daily flow would be 830,886 gpd (0.83 mgd). The City's wastewater treatment facility is operating at 75% of its 7.5-mgd capacity, or 5.6 mgd with 1.9 mgd of available capacity. Therefore, treatment capacity at the City's wastewater treatment facility is more than sufficient to serve the proposed project. In the short term, this impact is considered less than significant.

However, as described previously, the City of West Sacramento was recently annexed to the SRCSD. As part of Sacramento County's LNWI project, a pipeline will be installed that connects West Sacramento to the SRWTP, which will provide 47 mgd of flow capacity for West Sacramento, beginning in approximately 2007. Following connection with the LNWI project, the City of West Sacramento WWTP will be decommissioned.

As discussed above, collected wastewater flows from the project site would ultimately be transported to the SRWTP for treatment and disposal. The SRWTP receives and treats an average of 165 mgd (as of 2005) and has a permitted dry weather flow design capacity of 181 mgd.

Flow to the SRWTP would increase over time as the population in the SRCSD increases. According to the Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final EIR (Sacramento County Department of Environmental Review and Assessment 2004), the permitted capacity of the SRWTP is expected to be reached before 2010. The 2020 Master Plan, which was approved in 2004, provides for the expansion of the SRWTP to 218 mgd. This projected capacity, based on overall growth rates in the SRCSD, is expected to be achieved in the county by 2020. The growth rates are not intended to be exclusively applied to any particular project or location in the SRCSD but are intended to reflect overall development in the SRCSD up to 2020. Thus, if new development is approved before 2020, it is assumed that it would not change the rate of growth in the district; rather, it would simply identify a location within the SRCSD where the growth would occur. Expansion is planned to be phased to provide for sufficient long-term capacity.

As described in the Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final EIR (Sacramento County Department of Environmental Review and Assessment 2004), the construction of expansion to and operation of the expanded SRWTP would result in several environmental impacts, most of which would be reduced to a less-than-significant level through mitigation. The only significant and unavoidable impact would be from short-term increases oxides of nitrogen (NO_X) during construction of SRWTP facilities.

According to the SRCSD, there is expected to be sufficient SRWTP capacity to accommodate project flows (Eggard, pers. comm., 2005). However, the proposed project ultimately would contribute to the need to expand the facility and contribute to the **significant and unavoidable** impact related to air quality from expansions of the SRWTP.

Mitigation Measures

Regarding expansion of the SRWTP, mitigation of air quality impacts is the responsibility of the SRCSD and would be implemented in accordance with the certified EIR. Additional mitigation would not be feasible.

IMPACT 3.7-5	Public Utilities — Increased Generation of Solid Waste. *The proposed project would incrementally increase the amount of solid waste generated in the city. However, Yolo County Central Landfill, which would receive solid waste from the project study area, has long-term available capacity. Therefore, this impact is considered* ***less than significant****.*

The California Integrated Waste Management Board (CIWMB) provides an average per-capita solid waste disposal rate for Yolo County of 0.36 ton per resident per year (CIWMB 2004b). The estimated total population for the proposed project at buildout is 2,025 residents; therefore, solid waste generation from project residents would be approximately 729 tons per year. In addition, approximately 3,253 workers are expected to be employed on the project site. The proposed project provides for several types of commercial development, including commercial and office uses, as would normally occur in a large mixed-use development. Business waste disposal rates are calculated by CIWMB to range from 0.3 ton per year for general merchandise stores to 3.1 tons per year for restaurants (CIWMB 2004c). Most employees at the project site likely would work in jobs within waste categories such as retail/finance/insurance/real estate/legal (0.3 ton per employee per year), other professional services (1.2 tons per employee per year), communications (1.5 tons per employee per year), business services (1.7 tons per employee per year), hotel services (2.1 tons per employee per year), and restaurants (3.1 tons per year). To estimate a single business waste disposal rate for the project, the two anticipated extremes among the categories (0.3 and 3.1 tons per employee per year) were averaged, resulting in a generation rate of 1.6 tons per employee per year. An average business waste disposal rate of 1.6 tons per employee per year equates to 5,221 tons of waste generated annually by employees at the proposed project site.

The combination of estimated residential and business solid waste generation for the proposed project is approximately 5,950 tons per year. (It should be noted that compliance with AB 939 and the CIWMP programs related to solid waste reduction and recycling could result in the actual solid waste generation rate being lower.) This rate would not be reached until full buildout of the project in 2011. Much lower generation rates would occur at project initiation in 2007, with gradual increases in the rate until full buildout. The Yolo County Central Landfill accepted 180,553 tons of material in 2003 (the most recent data available) (CIWMB 2004d). The 5,950 tons per year of solid waste estimated to be generated by the proposed project would make up 3% of this total. The Yolo County Central Landfill has approximately 16 million cubic yards of available capacity, which is estimated to last for more than two decades. This landfill has sufficient permitted capacity to accommodate the project's solid waste disposal needs. Therefore, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.7-6 **Public Utilities — Increased Demand for Electricity and Required Extension of Electrical Infrastructure.** *Implementation of the proposed project would increase demand for electricity. PG&E is able to provide electricity to the project site, and the increase in demand for electricity would not be substantial in relation to the existing electricity consumption in PG&E's service area. Therefore, this impact is considered* ***less than significant****.*

Implementation of the proposed project would increase electrical demand in the city. Electrical consumption for housing units averages 1,100 kWh per month in summer and 250 kWh per month in winter. Following an adjustment to account for lower per-unit volumes associated with high-density residential units, each housing unit is assumed to consume an average of 5,257 kWh per year (City of West Sacramento2004). Commercial and office energy consumption varies depending on specific uses, building materials, and space configurations. In general, commercial and office uses average approximately 8.8 kWh of electricity per square foot annually (City of West Sacramento2004). Based on these rates, the proposed project would increase electrical demand by 13.2 million kWh per year.

PG&E has adequate resources to serve electricity needs for the proposed project, as indicated in the Washington Specific Plan EIR (City of West Sacramento2004). The energy demands created by the proposed project are not considered substantial in relation to the total amount of energy supplied by PG&E in its northern and central California service area (estimated in 2000 to be 81,923 million kW per day of electricity) and available energy expected in the future (Pacific Gas and Electric Company 2004).

Aboveground and belowground electrical lines are in the vicinity of the project site. These lines parallel existing road rights-of-way and provide electricity to the Ziggurat, the River Walk Park area, and street lights along roadways. Project development would connect to extensions of the existing service lines located in road rights-of-way adjacent to the project site, with the ultimate configuration to be approved by PG&E. No new off-site electrical lines would be required for development of the proposed project. The on-site service lines would be sized to meet the demands of the project, and public utility easements would be dedicated for all underground facilities. Extension of lines and construction of facilities to serve the project site would occur concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicant would coordinate with and meet the requirements of PG&E regarding the extension and locations of on-site infrastructure. All existing aboveground infrastructure in the project area and all new on-site infrastructure would be installed underground, in conformance with City standards.

As described in the "Existing Conditions" section, the annexation of West Sacramento into SMUD's service area is moving forward. If LAFCo and voters approve the annexation, SMUD could begin serving the city in approximately October 2008. SMUD could extend service to the annexation territory, including the Raley's Landing project site, without diminishing current service and reliability levels (Sacramento Municipal Utility District 2005b). As stated previously, SMUD would purchase the existing electrical infrastructure from PG&E, including the infrastructure in the project area, and would extend lines and construct the facilities necessary to serve the project. Most of the Raley's Landing project is scheduled to be completed in 2009 or later. As part of the project approval process, the project applicants would coordinate with and meet the requirements of SMUD regarding the extension and locations of on-site infrastructure for the parts of the project that would be completed following annexation.

Because the proposed electrical utility improvements would be required to comply with all existing City, PG&E (or SMUD), and applicable Uniform Building Code requirements, it is anticipated that the proposed electrical utility improvements would be sufficient to serve the proposed project. Therefore, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.7-7 **Public Utilities — Increased Demand for Natural Gas and Required Extension of Natural Gas Infrastructure.** *Implementation of the proposed project would increase demand for natural gas. PG&E is able to provide natural gas to the project site, and the increase in demand for natural gas would not be substantial in relation to the existing natural gas consumption in PG&E's service area. Therefore, this impact is considered* ***less than significant****.*

Implementing the proposed project would increase natural gas demand in the city. Natural gas consumption for housing units averages 90 therms per month in summer and 15 therms per month in winter. Following an adjustment to account for lower per-unit volumes associated with high-density residential units, each unit is assumed to consume an average of 410 therms per year (City of West Sacramento2004). Commercial and office energy consumption varies depending on specific uses, building materials, and space configurations. In general, commercial and office uses average approximately 1.78 therms of natural gas per square foot annually (City of West Sacramento2004). Based on these rates, the proposed project would increase natural gas demands by 2.1 million therms per year.

PG&E has acknowledged that it has adequate natural gas supplies to support development of the project area without adversely affecting service to current users (City of Sacramento2004). The energy demands created by the proposed project are not considered substantial in relation to the total amount of energy supplied by PG&E in its northern and central California service area (estimated in 2000 to be 887 million cubic feet per day of natural gas) and available energy expected in the future (California Gas Utilities 2004).

Natural gas lines are in the vicinity of the project site, and these lines parallel existing road rights-of-way. Project development would connect to extensions of the existing off-site service lines, with the ultimate configuration to be approved by PG&E. If PG&E determines additional off-site infrastructure is required for development of the proposed project, the project applicant would coordinate with PG&E, and new off-site infrastructure would be installed in existing utility rights-of-way. Additional on-site service lines would be sized to meet the demands of the project, and public utility easements would be dedicated for all underground facilities. Extension of lines and construction of facilities to serve the project site would occur concurrently with development phases. The location of this on-site infrastructure would be identified in the final project design. As part of the project approval process, the project applicant would coordinate with and meet the requirements of PG&E regarding the extension and locations of on-site infrastructure.

Proposed natural gas infrastructure would be required to comply with all existing City and PG&E requirements. Because PG&E is able to provide natural gas and associated infrastructure to the project site and because the increase in demand for natural gas would not be substantial in relation to the existing natural gas consumption in PG&E's service area, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

3.8 GEOLOGY AND SOILS

This section evaluates information regarding geology, slope stability, seismic hazards, and soils. It includes a summary of applicable regulations, describes existing geologic conditions, and contains an analysis of impacts of the proposed project. In addition, mitigation measures are recommended, as necessary, to reduce potentially significant geologic impacts.

Field exploration and testing were conducted separately for the respective areas of the project site:

- *River 1 area:* Testing was conducted by Wallace Kuhl & Associates, Inc. (WKA) in April and May 2005.
- *River 2 and River 3 areas:* Testing was conducted by WKA in December 2002.
- *Washington Street property:* Testing was conducted by TERRASEARCH, Inc. (Terrasearch) in December 2004 and January 2005.

During the 2002 testing in the River 2 and River 3 areas, WKA assumed construction of structures up to six stories tall. Terrasearch assumed construction of structures of similar height. However, during the 2005 testing in the River 1 area, WKA assumed construction of at least three buildings up to 10 stories in height. Much of the information in this section is based on the resulting geotechnical reports (WKA 2003, 2005; Terrasearch 2005), which are available for review at the City of West Sacramento Community Development Department offices at 1110 West Capitol Avenue, West Sacramento, California.

3.8.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA) by refining the description of the agency responsibilities, program goals, and objectives.

The mission of NEHRP includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through postearthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRPA designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other NEHRPA-participating agencies include the National Institute of Standards and Technology, National Science Foundation, and U.S. Geological Survey (USGS).

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as “Earthquake Fault Zones” around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Local agencies must regulate most development projects in the zones, including all land divisions and most structures intended for human occupancy.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, passed by the California state legislature in 1990, addresses earthquake hazards from nonsurface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards.

National Pollutant Discharge Elimination System Permit

In California, the State Water Resources Control Board (State Water Board) administers regulations promulgated by the U.S. Environmental Protection Agency (55 Code of Federal Regulations [CFR] 47990) requiring the permitting of stormwater-generated pollution under the National Pollutant Discharge Elimination System (NPDES). In turn, the State Water Board's jurisdiction is administered through nine regional water quality control boards (regional water boards). Under these federal regulations, an operator must obtain a General Permit through the NPDES Stormwater Program for all construction activities with ground disturbance of 1 acre or more. The General Permit requires the implementation of best management practices (BMPs) to reduce sedimentation into surface waters and control erosion. One element of compliance with the NPDES permit is preparation of a Storm Water Pollution Protection Plan (SWPPP) that addresses control of water pollution, including sediment, in runoff during construction. (See Section 3.10, "Hydrology and Water Quality," for more information about the NPDES and SWPPPs.)

California Uniform Building Code

The State of California provides minimum standards for building design through the California Building Standards Code (California Code of Regulations, Title 24). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls. The California Uniform Building Code (UBC) also applies to building design and construction in the state and is based on the national UBC used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). To reflect California conditions, the California UBC has numerous regulations that are more detailed or more stringent than those in the national UBC.

The state earthquake protection law (California Health and Safety Code Section 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 California UBC. The California UBC identifies seismic factors that must be considered in structural design.

Chapter 18 of the California UBC regulates the excavation of foundations and retaining walls, and Appendix Chapter A33 regulates grading activities, including drainage and erosion control, and construction on unstable soils, such as expansive soils and areas subject to liquefaction.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of West Sacramento General Plan

The following policies from the Health and Safety Element of the General Plan pertain to geology and soils and are relevant to the proposed project:

- **Policy A.1:** The City shall require preparation of geotechnical reports and impose appropriate mitigation measures to ensure, within the limits of technical and economic feasibility, that new structures are able to withstand the effects of seismic activity, including liquefaction.

- **Policy A.2:** Underground utilities, particularly water and natural gas mains, shall be designed to withstand seismic forces.

Washington Specific Plan

There are no policies in the *Washington Specific Plan* that are relevant to geologic and soils issues in the project area.

City of West Sacramento Grading Ordinance

In areas under local government jurisdiction, grading and construction are regulated through local use permits and grading permits in compliance with local ordinances. New construction generally must meet the requirements of the most recent version of the California UBC, including sections dealing with natural hazards from unstable and corrosive soils and earthquakes.

3.8.2 EXISTING CONDITIONS

GEOLOGY

The proposed project site is located in the Sacramento Valley, immediately west of the Sacramento River in the city of West Sacramento. The site is situated in the Great Valley geomorphic province of California. The Sacramento Valley is underlain by an asymmetrical depression (formed by intersecting, downward sloping folds of bedrock) in which various sedimentary deposits have accumulated in a sequence of units (known as the Great Valley Sequence) for more than 100 million years. Formation of the Great Valley Sequence began with marine sediments from a receding ocean and was followed more recently by river deposits (alluvial deposits) washing down from the Sierra Nevada, Klamath Mountains, Cascade Range, and Coast Ranges.

The materials underlying the project site consist of Quaternary-aged (less than 10,000 years before present) levee and channel deposits associated with Sacramento River basin fluvial deposits. These deposits are a few hundred meters thick and are underlain by older alluvium, consisting of alternating layers of clay, silt, sand, and gravel up to a few kilometers in depth. These units include the Riverbank and Modesto Formations (late Pleistocene). These formations are underlain by bedrock of the Great Valley Sequence.

TOPOGRAPHY

West Sacramento is located on reclaimed land (i.e., riverside marshland drained by the early settlers for agriculture), is essentially flat, and is protected from seasonal flooding by levees along the Sacramento River and Yolo Bypass. Most of West Sacramento is 10–30 feet above mean sea level (amsl). Topography on the project site is essentially flat or gently sloping. The surface elevation in the River 1 area varies from elevation 20 feet amsl to 37 feet amsl at the Sacramento River levee (WKA 2005). Elevation in the River 2 and River 3 areas is similar, varying from 22 feet amsl to 37 feet amsl at the levee, with an average elevation of 23 feet amsl (WKA 2003). The surface elevation at the Washington Street property is approximately 23 feet amsl; the terrain is level (Terrasearch 2005). The River 1, River 2, and River 3 areas are located adjacent to the Sacramento River levee, but the project site is located entirely on the land side of the levee.

SOILS

Soil properties can affect the construction and maintenance of roads, building foundations, and infrastructure. Among these properties are permeability, shrink-swell potential, water retention capacity, and corrosion potential.

Soils at the project site are Lang sandy loam (La) (the River 1 and River 2 areas, the River 3 area east of Second Street, and the extreme southeastern edge of the Washington Street property) and Sycamore silt loam (So) (the

River 3 area west of Second Street, nearly all of the Washington Street property) (U.S. Soil Conservation Service 1972, cited in City of West Sacramento 1995) (Exhibit 3.8-1). These soil types are characterized as having moderate to rapid permeability and low to moderate shrink-swell potential (U.S. Soil Conservation Service 1972). These soil characteristics are summarized in Table 3.8-1.

Table 3.8-1
Summary of Project Site Soil Characteristics

Soil Group	Location on Project Site	Texture	Shrink-Swell Potential	Wind/Water Erosion Potential
Lang sandy loam	River 1 and River 2 areas; River 3 area east of Second Street; extreme southeastern edge of the Washington Street property	Loamy fine sand up to 72 inches deep	Low	Very slow surface runoff; rapid permeability; negligible to slight soil erosion hazard
Sycamore silt loam	River 3 area west of Second Street; nearly all of the Washington Street property	Silty clay loam	Moderate	Very slow surface runoff; moderate permeability; negligible soil erosion hazard

Sources: U.S. Soil Conservation Service 1972, cited in City of West Sacramento 2000; information compiled by EDAW 2005

Soils at the project site consist primarily of fine-grained sediments, mostly silt and clay. Surface and near-surface soil conditions on the various areas of the project site were characterized during the geotechnical investigations (WKA 2003, 2005; Terrasearch 2005) as follows:

- *River 1 area:* Brown, silty fine sands with interbedded layers of sandy silts and clean, cohesionless sands with occasional gravels to a depth of about 72 feet. Below this depth, the upper sands and silts grade into dark gray, sandy gravels with occasional cobbles to a depth of about 95 feet, underlain by gravelly sands to a depth of 100 feet (the maximum depth explored by WKA [2005]).

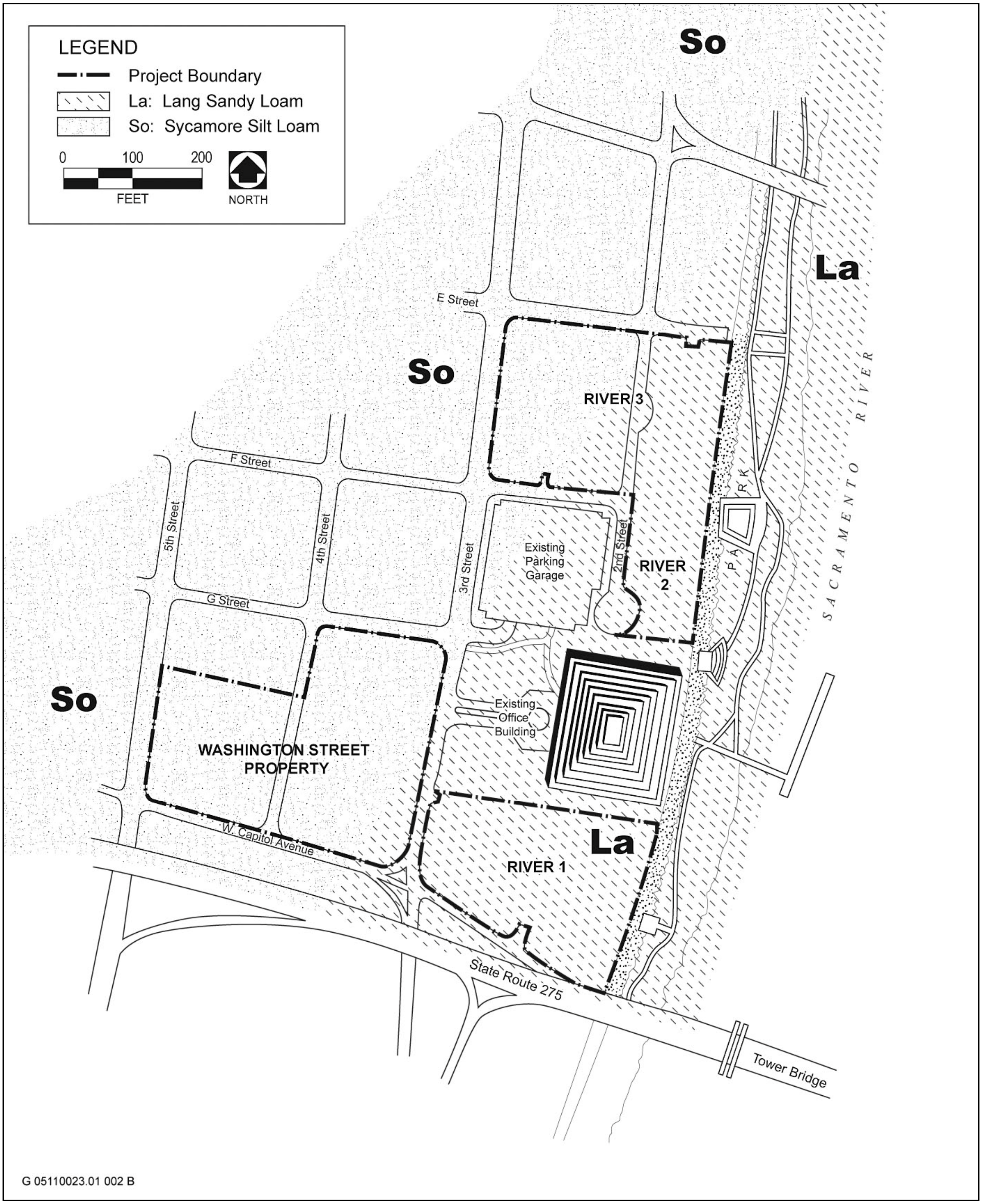
- *River 2 and River 3 areas:* Very similar to the River 1 area: Brown, silty fine sands with interbedded layers of sandy silts and clean, cohesionless sands with occasional gravels to a depth of about 65 feet. Below this depth, the upper sands and silts grade into dark gray, sandy gravels with occasional cobbles to a depth of about 77 feet (the maximum depth explored by WKA [2003]).

- *Washington Street property:* A thin surface layer of gravel underlain by approximately 20–25 feet of loose, compressible sand or silt throughout the site. These sands and silts are underlain by medium dense, poorly graded silty coarse sands to a depth of 50.5 feet (the maximum depth explored by Terrasearch [2005]).

The specific soil characteristics found at the project site are described in more detail below.

Shrink-Swell Potential

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture; soils swell when wet and shrink when dry. If the shrink-swell potential is rated moderate to high, volume changes can result in damage over time to building foundations, underground utilities, and other subsurface facilities if they are not designed and constructed appropriately to resist the changing soil conditions. Soils with high clay content tend to be most affected by shrink and swell. The potential for soil to undergo shrink and swell is greatly enhanced by the presence of a fluctuating, shallow groundwater table. Volume changes of expansive soils can result in the consolidation of soft clays following the lowering of the water table or the placement of fill.



Source: U.S. Soil Conservation Service 1972, cited in City of West Sacramento 1995

Soil Types at the Raley's Landing Project Site **Exhibit 3.8-1**

As mentioned above, one of the soil types (present in part of the River 3 area and on nearly all of the Washington Street property) in the project area is Sycamore silt loam, which has a moderate shrink-swell potential. In addition, the groundwater table in the project area is shallow. During exploratory borings conducted by WKA in the River 2 and River 3 areas, free groundwater was encountered at depths as shallow as 16 feet below existing grade (approximately 8 feet amsl). Review of previous groundwater measurements in the area found groundwater elevations to be shallower; in addition, WKA has concluded that groundwater levels in the River 1, River 2, and River 3 areas could occasionally rise as high as elevation 22 feet amsl at high-water stages of the Sacramento River, thus requiring special measures to minimize effects of high groundwater beneath interior floor slabs (WKA 2003, 2005). Despite the shallowness of the water table, WKA (2003, 2005) concluded that expansive soils should not be a significant factor in site development in the River 1, River 2, and River 3 areas because surface and near-surface soils are generally granular in nature and considered nonexpansive. Similarly, at the Washington Street property, Terrasearch (2005) found the native surface and near-surface soils to be generally granular in nature and nonexpansive despite a shallow groundwater table.

Seepage and Soil Moisture

As described above, groundwater at the project site is an average of approximately 15–16 feet below ground surface in the lowest areas of the site. Soil permeability is moderate to rapid, but surface runoff is very slow, combining with high groundwater levels during the winter and spring months to create saturated surface soil conditions and high soil moisture content. Groundwater is generally anticipated in excavations deeper than 20 feet in the River 1 area (WKA 2005), 16 feet in the River 2 and River 3 areas (WKA 2003), and 15 feet at the Washington Street property (Terrasearch 2005). WKA (2003, 2005) noted that groundwater may be present at shallower depths than found during its measurements in the River 1, River 2, and River 3 areas, particularly during high-water stages of the Sacramento River.

Corrosion Potential

Corrosion is the gradual degradation of materials through electrochemical processes resulting from the interaction between chemical properties of the soil (e.g., pH, resistivity, sulfate, and chloride concentrations) and metal, concrete, or stone. Soils with high moisture content, high electrical conductivity, high or low pH, and high dissolved salts will have the greatest potential to be most corrosive. WKA (2005) tested two samples of near-surface soils at the River 1 site to evaluate the potential for corrosion. Based on the results of an analysis for pH, chloride and sulfate levels, and minimum resistivity, WKA (2005) found that the on-site soils are not unusually corrosive. Previously, WKA (2003) found the surface and near-surface soils in the River 2 and River 3 areas to be granular in nature and generally considered noncorrosive to buried metal and reinforced concrete. Surface and near-surface soils at the Washington Street property were also found to be granular (Terrasearch 2005); therefore, corrosion potential can be considered to be similar to that in the River 2 and River 3 areas. However, no lab testing by a corrosion engineer has been completed, so no definitive conclusion can be reached regarding the soil corrosion potential in these areas.

MINERAL RESOURCES

The California Geological Survey (formerly the California Department of Conservation, Division of Mines and Geology) classifies the regional significance of mineral resources in accordance with the California Surface Mining and Reclamation Act of 1975. Mineral Resource Zones (MRZs) have been designated to indicate the significance of mineral deposits. The MRZ categories are as follows:

- *MRZ-1:* Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

- *MRZ-2:* Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.

- *MRZ-3:* Areas containing mineral deposits the significance of which cannot be evaluated from available data.
- *MRZ-4:* Areas where available information is inadequate for assignment to any other MRZ.

No commercial mining operations are known to have occurred in West Sacramento. Most of the area is classified as MRZ-1 by the California Geological Survey. The portion of West Sacramento that borders the Sacramento River, including the proposed project site, is designated MRZ-3 (CDMG 1988); therefore, mineral deposits could potentially be present. However, as indicated in the geotechnical reports for the proposed project (WKA 2003, 2005; Terrasearch 2005), the project site contains only a few scattered pockets of clean sand (sand and aggregate being the mineable mineral resources typically found in the project region), in layers and at various depths; therefore, the site could not be effectively or economically mined and is considered not to contain regionally or locally important mineral resources.

SEISMICITY

Ground Shaking

Although the entire state of California is subject to ground shaking from numerous active fault systems that cross the state, West Sacramento is located in one of the least seismically active regions in California. According to existing geologic information, there are no known or inferred faults in West Sacramento. The nearest known faults are located generally west to southwest of West Sacramento. The nearest potentially active faults (faults that have been active within the past 3 million years) are identified in Table 3.8-2, which also displays the maximum credible earthquakes these faults could produce. Because these faults are reported to have had horizontal displacements in the past, they are considered potentially active.

Table 3.8-2
Faults Affecting the Project Area

Fault	Approximate Distance (miles) from Project Site	Maximum Credible Earthquake [1] (Richter Scale Magnitude)
San Andreas	100	8.3
Hayward	80	7.0
Rodgers Creek	70	7.0
Calaveras	70	7.0
West Napa	50	N/A
Concord	50	6.9
Green Valley	50	6.9
Marsh Creek/Greenville	40	6.5
Dunnigan Hills	30	6.25 [2]

[1] The term “maximum credible earthquake” (MCE) is defined as the largest earthquake that is likely to be generated along an active fault zone (Slemmons and Chung 1982).
The magnitude of the MCE is estimated from the geologic character and earthquake history of the fault. Most workers, when calculating the MCE for the strike-slip faults of the Coast Ranges, estimate the potential length of surface rupture, then use empirical relations that equate rupture length with earthquake magnitude. As a minimum, the MCE must equal the largest historic earthquake on a fault.
[2] Source: Wesnouski 1986.
Sources: City of West Sacramento 1995; information compiled by EDAW 2005

The Richter scale is a logarithmic scale that expresses the magnitude of an earthquake in terms of the amount of energy generated, with 1.5 indicating the smallest earthquake that can be felt, 4.5 an earthquake causing slight damage, and 8.5 a very damaging earthquake.

Review by WKA of the *Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada*, dated February 1998, prepared by the California Geological Survey to be used with the 1997 UBC, indicates that, within 15 kilometers (9.3 miles) of the project site, there are no type "A" (magnitude 7.0 or higher) or "B" (magnitude 6.5–7.0) faults. The site has been placed in Zone 3 in the 1997 edition of the UBC, indicating a 1-in-10 chance that an earthquake with an active peak acceleration level of 0.3 gravity (g) (equivalent to ±30% of the earth's normal gravitational strength) would occur in the next 50 years.

More specifically, WKA (2005) and Terrasearch (2005) calculated site-specific probabilistic ground acceleration for the River 1 area and the Washington Street property, respectively. The Terrasearch (2005) calculation considered active earthquake fault zones within a 100-kilometer (62.1-mile) radius, whereas WKA (2005) considered the cumulative effect of fault activity within a larger area, a radius of 100 miles. Terrasearch (2005) found that there would be a 1-in-10 chance of horizontal ground acceleration (ground shaking) of more than 0.16g at the Washington Street property within 50 years. Based on the larger fault zone radius it considered, WKA (2005) found that the River 1 area has a 1-in-10 probability of exceeding 0.22g horizontal ground acceleration within 50 years. By comparison, the California Geological Survey peak ground acceleration map for the state (California Geological Survey 2005a) shows corresponding peak horizontal ground acceleration in areas in the immediate vicinity of the San Andreas Fault to be approximately 0.8g.

There are no Earthquake Fault Zones subject to the Alquist-Priolo Act in West Sacramento (California Geological Survey 2004). In addition, no Seismic Hazard Zones have been identified in West Sacramento (California Geological Survey 2005b).

The Modified Mercalli Scale, presented in Table 3.8-3, is a scale used to illustrate the effects of earthquake intensity. Table 3.8-4 shows the approximate relationships between earthquake magnitude (Richter scale) and intensity (Modified Mercalli Scale). The California Geological Survey indicates that the Washington Specific Plan area, in which the project site is located, is in a region of moderate maximum earthquake intensity, that is, a zone of VII to VIII on the Modified Mercalli Scale; an earthquake of maximum intensity in this region would cause general alarm and moderate damage (CDMG 1973, cited in City of West Sacramento 1995).

Liquefaction

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. Primary factors in determining liquefaction potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Silts, sands, and sensitive marine clays are susceptible to liquefaction. Age also is a factor in the potential of soils to liquefy, with Holocene deposits (from approximately the last 11,000 years) being the most sensitive to liquefaction.

One consequence that may result from the occurrence of liquefaction is an associated surface expression. If the seismic event occurs over an extended duration, the liquefied soils may migrate toward the surface, resulting in ejection and subsequent sand boiling at the surface.

Liquefaction poses a hazard to engineered structures. The loss of soil strength can result in bearing capacity insufficient to support foundation loads, increased lateral pressure on retaining or basement walls, and slope instability. The possibility that liquefaction will occur is greatest in very loose, clean sands with the groundwater level near the ground surface. Its occurrence is particularly likely where land has been reclaimed from inundated areas by filling with loose sand.

Table 3.8-3
Modified Mercalli Scale of Earthquake Intensity

Scale	Effects
I.	Not felt except by a very few under especially favorable conditions.
II.	Felt only by a few persons at rest, especially on upper floors of buildings.
III.	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV.	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V.	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI.	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII.	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII.	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX.	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X.	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI.	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII.	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Source: U.S. Geological Survey 2005

Table 3.8-4
Approximate Relationships between Earthquake Magnitude and Intensity

Richter Scale Magnitude	Maximum Expected Intensity (Modified Mercalli Intensity Scale)	Distance Felt (Approx. Miles)
3.0 – 3.9	I – III	15
4.0 – 4.9	IV – V	30
5.0 – 5.9	VI – VIII	70
6.0 – 6.9	VII – VIII	125
7.0 – 7.9	IX – X	250

Source: California Office of Emergency Services 2005

Groundwater levels are high throughout the proposed project site. As mentioned in the “Shrink-Swell Potential” section above, WKA encountered groundwater in the River 1 area at approximately 20 feet below existing grades (elevation 4 feet amsl) and in the River 2 and River 3 areas at approximately 16 feet below existing grades (elevation 8 feet amsl), and found that groundwater levels could infrequently rise as high as elevation 22 feet amsl at high-water stages of the Sacramento River (WKA 2003, 2005). Terrasearch (2005) encountered groundwater at approximately 16–20 feet below existing grades at the Washington Street property. Although the surface soils are generally fine grained or clay and less likely to liquefy, clean granular sand deposits have been encountered below the fine-grained surface soils within borings performed in the project area. These granular deposits are almost always saturated because they are located below the groundwater table.

The conditions described above typically increase the potential for liquefaction at a site. However, WKA (2003, 2005) noted that there have been no reported instances of liquefaction having occurred in the West Sacramento or downtown Sacramento areas during the major earthquake events of 1892 (Vacaville-Winters), 1906 (San Francisco), or 1989 (Loma Prieta). WKA (2003, 2005) also stated that the chances of liquefaction adversely affecting structures in the River 1, River 2, and River 3 areas are very remote as long as office structures are supported on driven or auger cast piling extending below the soils that are susceptible to potential liquefaction. Terrasearch (2005) indicated that the likelihood of liquefaction or sand boil at the Washington Street property is low to minimal given the anticipated seismic loads and subsurface materials.

Subsidence and Lateral Spreading

Subsidence is a gradual lowering of the ground surface that can be caused by the compaction or loss of surface materials; the oxidation of organic soils; or the extraction of groundwater, gas, oil, or geothermal energy resources. Subsidence (and its opposite, uplift) can also be triggered by seismic activities. Groundwater withdrawal is the cause of most land subsidence within California. Subsidence has not been reported in West Sacramento.

Lateral spreading is the horizontal movement or spreading of soil toward an open face, such as a streambank, the open side of fill embankments, or the sides of levees. The potential for failure from lateral spreading is highest in areas where there is a high groundwater table, where there are relatively soft and recent alluvial deposits, and where creek banks are relatively high. The project area is protected from the Sacramento River by a levee, but the groundwater table is high, and the upper soil underlying the area is composed of alluvial deposits.

Although no active faults underlie the proposed project site, earthquakes could cause land subsidence and lateral spreading (City of West Sacramento 1995).

3.8.3 ENVIRONMENTAL IMPACTS AND MITIGATION

ANALYSIS METHODOLOGY

Evaluation of potential geologic and soil impacts was based on a review of documents pertaining to the project site, including the *City of West Sacramento General Plan* (City of West Sacramento 2004), the *Washington Specific Plan* (City of West Sacramento 1996), Washington Specific Plan Draft EIR (City of West Sacramento 1995), and geotechnical reports prepared by WKA (2003, 2005) and Terrasearch (2005); field review of the proposed project site; and review of other environmental documents prepared for nearby projects. Impacts related to geology and soils that would result from implementation of the proposed project were identified by comparing existing data and environmental documents.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on the State CEQA Guidelines. A geology and soils impact is considered significant if implementation of the proposed project would do any of the following:

- expose people or structures to potential substantial adverse effects, 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 Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
    - strong seismic ground shaking;
    - seismic-related ground failure, including liquefaction; or
    - landslides;
- result in substantial soil erosion or the loss of topsoil;
- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of a project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, or liquefaction or collapse;
- be located on expansive soil, as defined in Table 18-1-B of the UBC (1997), creating substantial risks to life or property;
- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water;
- result in obstruction of access to and extraction of mineral resources, in particular, aggregate resources; or
- result in removal or disruption of mineral resources classified as MRZ-2.

With regard to the proposed project, the following issues are not addressed in the impact analysis:

- *Landslide:* The proposed project site is relatively level and does not contain any steep slopes; therefore, it is not subject to landsliding.
- *Seiche:* Seiche is an oscillation within an enclosed or restricted body of water caused by moderate ground motion, such as from an earthquake. The proposed project site is adjacent to the Sacramento River, but this water body is not considered large enough to generate a substantial seiche-generated wave, particularly a wave that would overtop or significantly damage the existing levee protecting the project site.
- *Mineral resources:* The MRZ designation provided by the California Geological Survey, coupled with the site-specific geologic and soils data collected by WKA (2003, 2005) and Terrasearch (2005) indicate that there are no significant mineral deposits at the project site.
- *Septic systems:* The proposed project would be served by the City of West Sacramento's (City's) existing wastewater collection and treatment system. The proposed project does not include and would not use septic tanks or alternative wastewater disposal systems.

IMPACT 3.8-1 **Geology and Soils — Risks to People and Structures Caused by Strong Seismic Ground Shaking.** *The project site is approximately 30 miles from the nearest potentially active fault and is classified in UBC Seismic Zone 3. Project facilities would be designed in accordance with UBC seismic standards for structures located within Zone 3. However, the proposed project includes construction of one or more high-rise structures, which carry inherently greater risk of seismic hazards. This impact is considered* ***potentially significant****.*

According to the California Geological Survey's *Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada*, there are no type "A" or "B" faults located within 15 kilometers (approximately 9 miles) of the project site (WKA 2003). The site is classified as being in Seismic Zone 3 in the 1997 edition of the UBC; for this reason, the level of anticipated seismic ground shaking is lower at the site than in many areas within the state of California. The nearest potentially active fault is the Dunnigan Hills fault, approximately 30 miles west/southwest of the project site, which is estimated to have a maximum credible earthquake of 6.25 on the Richter scale.

Terrasearch (2005) and WKA (2005) calculated site-specific probabilistic ground acceleration for the Washington Street property and the River 1 area, respectively. The Terrasearch (2005) calculation considered active earthquake fault zones within a 100-kilometer (62.1-mile) radius, whereas WKA (2005) considered the cumulative effect of fault activity within a larger area, a radius of 100 miles. Terrasearch (2005) found that there would be a 1-in-10 chance of horizontal ground acceleration (ground shaking) of more than 0.16g at the Washington Street property within 50 years. Based on the larger fault zone radius it considered, WKA (2005) found that the River 1 area has a 1-in-10 probability of exceeding 0.22g horizontal ground acceleration within 50 years. (WKA [2005] also found that the River 1 area has a 1-in-10 probability of exceeding 0.26g horizontal ground acceleration within 100 years.) By comparison, the California Geological Survey peak ground acceleration map for the state (California Geological Survey 2005a) shows corresponding peak horizontal ground acceleration in areas in the immediate vicinity of the San Andreas fault to be around 0.8g.

Strong ground shaking may still occur at the site, however, as a result of large, distant earthquakes. The California Geological Survey indicates that the project area is located in a region of moderate maximum earthquake intensity, corresponding with a zone of VII to VIII on the Modified Mercalli Scale (CDMG 1973, cited in City of West Sacramento 1995). Earthquakes of maximum intensity in this region would cause general alarm and moderate damage. As required by standard engineering practices, project facilities would be designed in accordance with seismic standards of the UBC for structures located in Seismic Zone 3. These construction standards would minimize the seismic ground shaking effects on developed structures. However, the proposed project includes construction of one or more high-rise buildings, which carry inherently greater risk of seismic hazards. If the project is not designed or constructed appropriately, a large seismic event could expose occupants of these structures to a substantial risk of loss, injury, or death. Therefore, this impact is considered **potentially significant**.

Mitigation Measure 3.8-1: Implement Recommended Measures to Reduce the Potential for Exposure to Seismic Hazards

Geotechnical reports for the proposed project have been prepared (WKA 2003, 2005; Terrasearch 2005) that evaluate the potential for various geologic and seismic-related hazards. Before contract bidding for project construction, the approved project design plans and specifications, including grading and foundation plans, shall be reviewed by a soils engineer approved by the City. This review shall be completed to assess whether the recommendations in the geotechnical reports (outlined below), some of which were made for construction of six-story office buildings and associated parking lots (i.e., the recommendations in the earlier WKA report and the Terrasearch report), are sufficient for construction of the buildings and parking structures described in the final project design plans. If these measures are deemed insufficient, the geotechnical engineer shall prepare a supplemental site-specific geotechnical report with appropriate recommendations sufficient to ensure the safety of project structures and site occupants.

During project design and construction, all measures outlined in the geotechnical reports for the proposed project (WKA 2003, 2005; Terrasearch 2005) and, if necessary, measures included in the supplemental site-specific geotechnical report shall be implemented to ensure that project structures and site occupants are safe. Measures included in the geotechnical reports for the proposed project may be superseded or supplemented by related measures in the site-specific geotechnical report depending on project specifications at the time of construction.

Measures to be implemented (which are described in detail in the geotechnical reports [WKA 2003, 2005; Terrasearch 2005]) include, but are not necessarily limited to, the following:

(a) *Recommendations regarding structural foundation design.* The geotechnical reports call for deep (driven pile) foundation as the preferred option for multistory structures, such as the proposed hotel and mixed-use building in the River 1 area. If this foundation is used, all recommended measures shall be followed regarding predrilling of pile locations; use of driven, precast, prestressed concrete piles or auger cast-in-place piles with specified maximum allowable loads per pile and ultimate pile capacity; specified pile lengths; minimum spacing between piles; and minimum rated energy for the pile-driving hammer.

    Other options specified by Terrasearch (2005) include use of a mat slab foundation or a spread footing foundation. If used, the mat slab may be a conventionally reinforced slab or posttensioned slab. Recommendations regarding design bearing pressure, improvement of soil to support the mat slab, and accommodating lateral building loads shall be followed. The spread footing foundation requires specified measures for improvement of subgrade soil. These recommendations shall be followed if this foundation type be used.

    For shorter structures proposed for the River 1 area (considered two- to three-story structures by WKA [2005]), WKA (2005) calls for continuous and/or isolated spread foundations bearing at least 18 inches below lowest adjacent soil grade. Measures described in the WKA (2005) report shall be followed to ensure adequate soil bearing pressures and otherwise provide structural continuity.

(b) *Observance of design and construction requirements for basement floor (garage) slabs*, retaining walls, loading dock slabs, and sidewalks and other pavement throughout the site.

(c) *A load testing program* before driving of piles and/or installation of supporting structures.

(d) *Construction testing and observation by a qualified soils engineer* throughout the construction period, including site clearing, grading, and excavation; fill placement; and foundation and pavement construction.

(e) Observance of *minimum excavation slope requirements* and maximum slope angles for all cut-and-fill slopes.

(f) *Specifications for soil excavation and engineered fill,* including excavation of former borrow pit areas within the River 1 area, moisture conditioning of fill throughout the site, and backfilling. Testing of fill used on-site must be completed by a geotechnical representative.

(g) *Requirements associated with design and construction of utility trenches,* including recommendations for shoring and backfilling of trenches.

(h) *Recommendations to minimize the adverse effects of shallow groundwater* on lower floors of buildings. The geotechnical reports call for a geotechnical representative to determine the need for a subdrain beneath interior slab-on-grade lower floors. Additionally, before construction, the general contractor, concrete contractor, owner, and other members of the design team should discuss potential additional measures for slab moisture protection.

The preceding measures are appropriate for typical construction in the late-spring through fall months. The on-site soils likely will be saturated by rainfall in the winter and early spring months. If the construction schedule requires continued work during the wet months, the City shall consult with a qualified civil engineer and implement any additional recommendations provided, as conditions warrant.

With implementation of this mitigation measure, the proposed project would no longer expose people or structures to potential substantial adverse effects involving strong seismic ground shaking; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.8-2 **Geology and Soils — Risks to People and Structures Caused by Seismic-Related Ground Failure.** *Based on the underlying soil conditions in the project area and the shallowness of the groundwater table, construction of the proposed project has the potential to expose people or structures to seismic-related ground failure, including liquefaction and differential settlement. The proposed project also includes construction of one or more high-rise structures, which carry inherently greater risk related to seismic hazards. Therefore, this impact is considered* ***potentially significant****.*

As mentioned above in the discussion of Impact 3.8-1, the project site is located in the UBC's Seismic Zone 3, so the level of anticipated seismic ground shaking is lower than for many other areas in California. However, strong ground shaking (corresponding with a zone of VII to VIII on the Modified Mercalli Scale) may still occur as a result of large, distant earthquakes, causing general alarm and moderate damage.

No liquefaction is reported to have occurred in West Sacramento during the major earthquake events of 1892 (Vacaville-Winters), 1906 (San Francisco), or 1989 (Loma Prieta) (WKA 2003, 2005). Terrasearch (2005) stated that the Washington Street property is marginally susceptible to liquefaction or differential compaction because of the nature of the subsurface materials on the site.

However, as discussed previously, groundwater levels are high throughout the project site. The surface soils are generally fine-grained or clay and less likely than other soil types to liquefy; however, clean granular sand deposits have been encountered below the fine-grained surface soils in borings performed in the project area. According to the geotechnical reports (WKA 2003, 2005; Terrasearch 2005), these granular deposits found below the surface soils throughout the project site are almost always saturated because they are located below the groundwater table. During strong ground shaking, these loose, saturated, cohesionless soils at the project site could undergo liquefaction.

The risk to people and structures from seismic-related hazards associated with unstable soils is inherently greater with construction of a high-rise structure. The results of field and laboratory tests conducted by WKA (2003) indicated that the surface and near-surface soils in the upper 20–30 feet across the River 2 and River 3 areas are insufficiently dense and lack the necessary shear strength for support of the relatively heavy column loads anticipated for the planned structures without experiencing damaging total and differential settlements. (Underlying sands and gravels greater than 65 feet below grade were considered capable of supporting relatively heavy structural loads.) Similarly, Terrasearch (2005) found that the loose, compressible soil in the upper 20–25 feet across the Washington Street property has relatively low bearing capacity and, given the anticipated relatively high building loads, is prone to consolidation settlements.

The likelihood of settlement may actually be greater than stated by WKA (2003, 2005) and Terrasearch (2005) in the geotechnical reports for the River, 1, 2, and 3 areas and for the Washington Street property; the reports were completed assuming construction of buildings up to six stories tall in the River 2 and 3 areas and on the Washington Street property and up to 10 stories tall in the River 1 area, but several of the buildings associated with the project would be taller than these heights, resulting in heavier building loads. Given these conditions, if project buildings are not designed or constructed appropriately, a large seismic event could expose occupants of these structures to a substantial risk of loss, injury, or death.

For the reasons described above, this impact is considered **potentially significant**.

Mitigation Measure 3.8-2: Implement Mitigation Measure 3.8-1

The City shall implement Mitigation Measure 3.8-1, described above, to reduce the risks to people and structures of seismic-related ground failure at the proposed project site.

With implementation of this mitigation measure, the proposed project would not expose people or structures to potential substantial adverse effects involving seismic-related ground failure; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.8-3 **Geology and Soils — Construction-Related Erosion Hazards.** *Excavation and grading of soil could result in localized erosion during project construction. Dewatering may be required during some excavation activities as a result of high groundwater levels, which could also increase the potential for construction-related erosion. Based on soil types and topography, however, soils at the project site have little erosion hazard, and required measures would be taken to protect stormwater runoff and minimize erosion during construction. This impact is considered* ***less than significant****.*

Soils at the project site are of Sycamore silt loam (So) and Lang sandy loam (La), which have been characterized as having only negligible to slight erosion hazards; moreover, the flat topography of the site would minimize the potential for wind erosion during grading activities or water erosion during a storm event. The River 1, River 2, and River 3 areas are located adjacent to the Sacramento River levee. However, the proposed project site is located entirely on the land side of the levee, and the levee itself would provide a topographic barrier that would prevent erosion sediments from reaching the river.

Project construction activities would involve excavation and grading of soil. These activities could result in localized erosion during the 5-year construction buildout period. In addition, high groundwater levels in the River 1, River 2, and River 3 areas could result in the need for dewatering during excavation activities deeper than 5 feet (in the River 1 area) and deeper than 8 feet (in the River 2 and River 3 areas) (WKA 2003, 2005), increasing the potential for erosion and the deposition of sediments at locations where the removed water is discharged. No dewatering is anticipated at the Washington Street property during basement excavation, but groundwater could affect some ground improvement options (Terrasearch 2005), thus potentially resulting in the need for dewatering.

Excavation activities, grading, and construction would be conducted according to standard construction practices and building codes. The project would comply with conditions of the state's General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit 99-08-DWQ), which requires the development of a SWPPP. As described in Mitigation Measure 3.10-2 in Section 3.10, "Hydrology and Water Quality," the SWPPP would identify BMPs that would be used to protect stormwater runoff and minimize erosion during construction. Implementation of the SWPPP and associated BMPs, as required by the regional water board, would result in only a minimal potential for soil erosion during project construction.

This impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.8-4 **Geology and Soils — Risks to People and Structures Resulting from Shrink-Swell Soil Conditions.** *Soils on portions of the project site are moderately susceptible to shrink-swell conditions. Such conditions may cause differential and cyclical foundation movements that can cause distress and damage to overlying structures. Although surface and near-surface soils on the site are generally granular and thus are considered relatively nonexpansive, the groundwater table is shallow, which enhances the potential for shrink and swell. This impact is considered* ***potentially significant****.*

In its geotechnical analyses for the River 1, River 2, and River 3 areas, WKA (2003, 2005) concluded that shrink-swell/expansive soils should not be a significant factor in site development because surface and near-surface soils are generally granular in nature. Similarly, at the Washington Street property, Terrasearch (2005) found the native surface and near-surface soils to be generally granular in nature and nonexpansive despite a shallow groundwater table. However, soils that are moderately susceptible to shrink-swell conditions have been found on portions of the project site. Specifically, Sycamore silt loam is present in the River 3 area west of Second Street and on nearly all the Washington Street property (U.S. Soil Conservation Service 1972, cited in City of West Sacramento 2000). According to the *Soil Survey of Yolo County, California* (U.S. Soil Conservation Service 1972), the shrink-swell potential of Sycamore silt loam is moderate. Where the shrink-swell potential is rated moderate to high, volume changes in expansive soils can cause differential and cyclical foundation movements that can result in distress and damage over time to building foundations, underground utilities, and other subsurface facilities.

The shrink-swell potential of Lang sandy loam, which is present in the River 1 and River 2 areas, the River 3 area east of Second Street, and a small portion of the Washington Street property, is low; therefore, hazards associated with expansive soils would appear to be less in areas where Lang sandy loam is present. In general, however, the potential for soil to undergo shrink and swell is greatly enhanced by the presence of a fluctuating, shallow groundwater table, as can be found throughout the project site regardless of soil type. Based on this information, there is potential for shrink-swell soils at the project site to cause damage to project structures. This could result in substantial risk to life or property. This impact is considered **potentially significant**.

Mitigation Measure 3.8-4: Implement Mitigation Measure 3.8-1

The City shall implement Mitigation Measure 3.8-1, described above, to reduce the risks to people and structures caused by expansive soil behavior.

With implementation of this mitigation measure, the proposed project would not create substantial risks to life or property associated with being located on expansive soil; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.8-5	Geology and Soils — Risk of Structural Damage Caused by Corrosive Soils. *The corrosiveness of on-site soils was generally evaluated to determine whether the soils could cause damage to buried concrete slabs and foundations and buried metal pipes during the operation of the proposed project. Soils were found to be noncorrosive to buried metal and reinforced concrete. However, the engineers who performed the testing were not corrosion engineers, and the final report recommends further analysis by a corrosion engineer. This impact is considered* ***potentially significant****.*

Limited site-specific corrosion testing for concrete and buried metals has been performed at the proposed project site. The surface and near-surface soils in the River 1, River 2, and River 3 areas were found to be granular in nature and are generally considered noncorrosive to buried metal and reinforced concrete (WKA 2003, 2005). Surface and near-surface soils at the Washington Street property were also found to be granular (Terrasearch 2005), so the soil corrosion potential can be considered similar to that in the River 2 and River 3 areas. However, no lab testing by a corrosion engineer has been completed, so no definitive conclusion can be reached regarding the soil corrosion potential in these areas. The consulting engineers recommend that additional analysis be conducted by a corrosion engineer to further define the soil corrosion potential or to design a cathodic protection system. Because corrosive soils could cause failures to underground structures over the long term, potentially causing substantial risk to life and property, and because the consulting engineers recommend additional testing, this impact is considered **potentially significant**.

Mitigation Measure 3.8-5: Obtain Additional Information Regarding Potential for Corrosive Soils and Implement Recommendations

A corrosive soils study shall be completed by a corrosion engineer for each portion of the proposed project site before the grading permit is issued for that area. The study shall be submitted to the City for review and approval before contract bidding for project construction. The study shall evaluate the potential for corrosive soils to occur at the site and shall specifically identify and address circumstances under which corrosive soils could damage underground facilities and, if needed, shall provide recommendations to prevent such damage. Recommendations included in the study shall be implemented by the project applicant. Potential methods to address corrosive soils include the use of cathodic protection or sacrificial anodes for buried metals, use of concrete with a lower water-to-cement ratio and/or sulfate-resistant concrete, and the use of Type II or Type II modified cement. Appropriate measures identified in the study shall be implemented during project construction.

With implementation of this mitigation measure, the proposed project would not expose people or structures to potential substantial adverse effects involving being located on corrosive soil: therefore, this impact would be reduced to **less than significant**.

3.9 HAZARDS AND HAZARDOUS MATERIALS

This section addresses impacts related to potential exposure of construction workers and the public to preexisting contaminants, hazardous materials, or other hazards on the four areas that make up the Raley's Landing project site during project construction and operation. Information was obtained from several Phase I, and in some cases Phase II, environmental site assessments (ESAs) and other documents that evaluate the potential for site contamination on the four areas. An ESA is conducted on a property to investigate the potential presence of hazardous materials on the property, in the soil, or in the groundwater. A Phase I ESA is an initial investigation of the site to identify whether materials are present that require further evaluation. A Phase II ESA is a supplemental investigation that explores subsurface conditions of those areas of the site that were identified by the Phase I ESA as having an elevated potential to create a recognized environmental concern at the site. Thus, it is an added investigative step for those areas that are likely to have contamination and confirms whether they do in fact have contamination present.

Table 3.9-1 lists the title, report preparer, date prepared, and the area for which documents evaluating the potential for site contamination at the Raley's Landing project site pertain. These documents are available for review at the City of West Sacramento Community Development Department offices at 1110 West Capitol Avenue, West Sacramento, California.

Table 3.9-1
List of Environmental Site Assessments and Other Documents That Evaluate the Potential for Site Contamination at the Raley's Landing Project Site

Document	Area			
	Washington Street	River 1	River 2	River 3
Preliminary Site Assessment: Broderick Property, January 1995 (Wallace-Kuhl & Associates)	X			
Phase I Environmental Assessment: 300-400 West Capitol Avenue, West Sacramento, CA 95695, October 8, 2002 (Kwest Engineering)	X			
Limited Phase II Investigation Report of Findings: Former Texaco Station, February 16, 2005 (Wallace-Kuhl & Associates)	X			
Report of Contamination Investigation for Proposed Raley's Landing, West Sacramento, California, May 1989 (Anderson Geotechnical Consultants)		X	X	X
Phase I Environmental Site Assessment: River 1 Property, West Capitol Avenue/Third Street, West Sacramento, California, April 29, 2005 (Kleinfelder)		X		
Phase I Environmental Assessment: West Capitol Center II, East and West of Second Street and North of the Money Store and South of East Street, West Sacramento, CA 95695, February 6, 2003 (Kwest Engineering)			X	X
Phase I/II Environmental Site Assessment: River 2 Parcel, West Sacramento, California, February 2, 2005 (Stellar Environmental Solutions)			X	
Phase I/II Environmental Site Assessment: River 3 Parcel, West Sacramento, California, February 2, 2005 (Stellar Environmental Solutions)				X

Table 3.9-1 (continued) List of Environmental Site Assessments and Other Documents That Evaluate the Potential for Site Contamination at the Raley's Landing Project Site				
Document	Project Area			
	Washington Street	River 1	River 2	River 3
Construction-Generated Waste Soil and Groundwater Management Plan, Portion of Raley's Landing Property, West Sacramento, California, letter dated June 3, 2005 (Stellar Environmental Solutions)			X	X
Soil Sampling Lead Results, River 2 and 3 Parcels, West Sacramento, California, letter dated March 17, 2005 (Kleinfelder)			X	X
Source: Compiled by EDAW 2005				

3.9.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Hazardous Materials Management

At the federal level, the principal agency regulating the generation, transport, treatment, storage, and disposal of hazardous substances is the U.S. Environmental Protection Agency (EPA), under the authority of the Resource Conservation and Recovery Act (RCRA). Individual states may implement their own hazardous substance management programs as long as they are consistent with, and at least as strict as, RCRA. EPA must approve state programs implementing the RCRA requirements.

EPA regulates hazardous substance sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). Applicable federal regulations are outlined primarily in Titles 29, 40, and 49 of the Code of Federal Regulations (CFR).

Hazardous Substances Worker Safety

The Occupational Safety and Health Administration (OSHA) is the agency responsible for ensuring worker safety. OSHA sets federal standards for training in the work place, exposure limits, and safety procedures in the handling of hazardous substances. OSHA also establishes criteria by which each state can implement its own health and safety program.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Hazardous Materials Management

Several state agencies regulate the transportation and use of hazardous materials to minimize potential risks to public health and safety. The California Environmental Protection Agency (Cal-EPA) and the Office of Emergency Services (OES) establish rules governing the use of hazardous substances in California. Within Cal-EPA, the Department of Toxic Substances Control (DTSC) has primary responsibility, with delegation of enforcement to local jurisdictions, for regulating the generation, transport, and disposal of hazardous substances under the authority of the Hazardous Waste Control Law (HWCL). Regulations implementing the HWCL list hazardous chemicals and common substances that may be hazardous; establish criteria for identifying, packaging, and labeling hazardous substances; prescribe management of hazardous substances; establish permit requirements for hazardous substances treatment, storage, disposal, and transportation; and identify hazardous substances prohibited from landfills.

The California Highway Patrol and California Department of Transportation (Caltrans) enforce regulations specifically related to hazardous materials transport. Individual regional water quality control boards (regional water boards) are the lead agencies responsible for identifying, monitoring, and cleaning up leaking underground storage tanks (USTs). The results of ESAs, such as those prepared for the proposed project, are provided to DTSC for concurrence and to obtain recommendations for further investigation. State regulations applicable to hazardous substances and hazardous waste regulations are outlined in Titles 22 and 26 of the California Code of Regulations (CCR).

Hazardous Substances Worker Safety

The California Occupational Safety and Health Administration (Cal-OSHA) assumes primary responsibility for developing and enforcing work place safety regulations in the state. Cal-OSHA regulations concerning the use of hazardous substances include requirements for safety training, availability of safety equipment, hazardous substances exposure warnings, and emergency action and fire prevention plan preparation. Cal-OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous substances, describing the hazards of chemicals, and documenting employee training programs.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Yolo County

In Yolo County, the County is responsible for enforcing the state regulations governing hazardous substance generators, hazardous substance storage, and USTs. The Environmental Health Division (EHD) of the Yolo County Health Department regulates the use, storage, and disposal of hazardous substances by issuing permits, monitoring regulatory compliance, and performing other enforcement activities. EHD reviews technical aspects of hazardous substance site cleanups, oversees remediation of certain contaminated sites resulting from leaking USTs, and is responsible for providing technical assistance to public and private entities that seek to minimize the generation of hazardous substances. Goals and policies for hazardous substance management, including transportation, storage, and disposal are reflected in the Yolo County Hazardous Waste Management Plan.

City of West Sacramento General Plan

The following policies from the Health and Safety Element of the General Plan pertain to hazards and hazardous materials and are relevant to the proposed project:

- **Policy C.8:** The City shall regulate the storage and manufacture of flammable, explosive, or otherwise hazardous materials and shall develop standards addressing the transport of these materials within the city.
- **Policy C.9:** The City shall continue to maintain and update an inventory of businesses that manufacture or maintain hazardous materials on the premises.

Washington Specific Plan

There are no policies in the *Washington Specific Plan* that are relevant to hazards and hazardous materials in the project area.

3.9.2 EXISTING CONDITIONS

The four areas that make up the Raley's Landing Project site are located entirely within the Washington Specific Plan Area. Hazardous materials contamination is known to exist within the plan area due to historical industrial, transportation, and commercial uses. Most of the documented contamination is related to petroleum-product (i.e., fuels and oils) leaks and spills (City of West Sacramento 1996).

The Washington Specific Plan EIR identifies two locations within the project site that contain reported hazardous materials contamination, one within the Washington Street Property area and the other within the River 1 area. Both sites include former gas stations (City of West Sacramento 1995). Contamination associated with these sites is discussed more extensively below. The Washington Specific Plan EIR also more generally discusses that the following hazardous materials may be present in soil or groundwater within the plan area: heavy metals (e.g., lead and mercury); volatile organic compounds (VOCs); hydrocarbons (e.g., diesel, fuel oil, gasoline); and semi-volatile organic compounds (City of West Sacramento 1995).

The following summarizes the potential for hazardous contamination within each of the four project areas, as described in the documents listed in Table 3.9-1.

WASHINGTON STREET PROPERTY

The Washington Street property currently contains no structures but is used as a parking lot for various functions that occur at Raley Field. Historical uses of the Washington Street property between Fourth and Fifth Streets included an apartment complex, single-family residences, a gas station (ARCO), and a commercial business center. The area between Third and Fourth Streets was previously occupied by a grocery store (Broderick Market), single-family residences, a bar/pool hall, and a gas station (Texaco).

The ESAs prepared for this area identify three former UST sites on the Washington Street property: one at the former ARCO gas station (490 West Capital Avenue), one at the former Texaco gas station (300 West Capitol Avenue), and one at the former Broderick Market (Kwest Engineering 2002). The presence of a UST at the Broderick Market has never been confirmed.

Files maintained by the Yolo County Health Department contain evidence suggesting that the USTs at the former ARCO gas station leaked (Kwest Engineering 2002). The five USTs were removed from the site in November 1989. At that time, samples were collected that detected total petroleum hydrocarbons (TPHs) as gasoline in the soils. Subsequent soil and groundwater monitoring found that the extent of contamination was limited, and an on-site monitoring well detected only low concentrations of gasoline constituents. In July 1991, the Yolo County Health Department completed a case closure letter, requiring no further assessment or remediation of the former UST site (Kwest Engineering 2002). It is anticipated that given the limited amount of contamination originally discovered at the former ARCO gas station site, the known geology/hydrogeology beneath the site, and the tendency for natural attenuation of petroleum hydrocarbons, that any detectable concentrations of petroleum hydrocarbon contaminants measured at the site previously would now most likely be nondetectable (Kwest Engineering 2002).

The former Texaco gas station operated between 1962 and 1980 and was vacant as of 1981. The four fuel USTs and one waste oil UST were removed from the site in February 1987. No leaks were apparent at the time of removal, but no subsurface sampling was conducted to verify whether contamination was present (Wallace-Kuhl & Associates 1995). In February 2005, a Phase II ESA was prepared to address the potential release of petroleum hydrocarbons related to the former gas station (Wallace-Kuhl & Associates 2005). This study included four soil borings to groundwater to collect subsurface soil samples and obtain groundwater samples near the locations of former USTs on the site. TPHs as diesel were detected in each of the four soil samples and in three of the groundwater samples. TPHs as motor oil were detected in one of the four soil samples and in two of the groundwater samples. No other TPHs (e.g., gasoline; benzene, toluene, xylenes, and ethyl benzene [BTEX]; and methyl tertiary-butyl ether [MTBE]) were detected in any of the samples. According to the Phase II ESA, the Central Valley Regional Water Board and Yolo County Health Department are likely to require the installation and sampling of at least one groundwater monitoring well in connection with future development of the site to evaluate petroleum hydrocarbons detected in the groundwater (Wallace-Kuhl & Associates 2005).

RIVER 1 AREA

The River 1 area is currently vacant, with ruderal vegetation and abandoned irrigation system piping (Kleinfelder 2005). The southeast area of the site had previously been occupied by the Marina Inn (between 1961 and 1981) and before that the First Pacific Coast Salmon Cannery (late 1800s) (Anderson Geotechnical Consultants 1989). These buildings may not have been connected to a sanitary sewer system; therefore, septic systems or remnant piping may be present on the site. Portions of the River 1 area have more recently been used as a borrow site for nearby construction activities. The southwest area of the site, at the West Capitol/Third Street intersection, included a former Shell gas station, operated sometime between the 1960s and 1970s. Information on the number of USTs related to the gas station, the location of the USTs, and installation and/or removal records for the USTs was not available from historical resources that were reviewed as part of the ESAs prepared for the site (Kleinfelder 2005). The gas station was reportedly removed in 1976. Yolo County began issuing permits for UST removal in 1984, so removal of the tanks, which may have occurred in 1976 with the removal of the gas station, may not have been recorded in readily available documents (Kleinfelder 2005). All that remains are the concrete slabs for the building and pump islands.

In 1989, Anderson Geotechnical Consultants conducted an initial evaluation of the site to assess potential contamination related to the former gas station. During this investigation, a backhoe was used to try to locate possible USTs remaining onsite, with excavations to depths of approximately 6 feet. No tanks were found, and no evidence of contamination (e.g., stained soils or petroleum odors) was found. Borings were taken at the expected location of the former USTs. No evidence of leakage from the USTs was encountered during sampling, and subsequent laboratory analysis of these samples did not detect any hazardous constituents of petroleum products (i.e., TPHs) (Anderson Geotechnical Consultants 1989).

A Phase I ESA conducted in 2005 acknowledges that additional assessment could be conducted for a greater level of certainty as to whether USTs remain on-site and whether soil or groundwater may have been affected by petroleum hydrocarbons and related constituents (Kleinfelder 2005).

RIVER 2 AREA

The River 2 area is currently vacant but was previously occupied by River Lines, a shipbuilding and repair facility that operated from about 1859 through 1959 (Anderson Geotechnical Consultants 1989). The River Lines property also extended into a portion of the River 3 area north of F Street and east of Second Street. Aboveground fuel storage tanks (ASTs) with a combined capacity of approximately 88,800 gallons and an associated underground fuel pipeline (used for ship fueling) that connected the ASTs to the Sacramento River were added to the southern portion of this property in approximately 1950 and removed between 1968 and 1976 (Anderson Geotechnical Consultants 1989). The type of fuels or fuel oils that were stored in the tanks is unknown. The site contains some earthen piles that appear to be imported from an off-site location, an asphalt pad, a vacant chain-link fence enclosure, an abandoned dumpster, and a 2-foot-diameter corrugated metal pipe labeled “stormwater.”

In 1989, Anderson Geotechnical Consultants conducted an initial evaluation of the site to assess potential contamination related to the former ASTs and associated pipeline. Borings were collected at locations near the ASTs and pipeline. Samples were tested for VOCs and semivolatile organic compounds. Lead, zinc, chromium, and oil and grease were detected in some of the soil samples (Anderson Geotechnical Consultants 1989). The samples indicated hazardous concentrations of lead (up to 1,500 milligrams per kilogram [mg/kg]) and no extractable-range hydrocarbons.

In 2004, additional soil sampling was conducted near the ASTs and pipeline. Low concentrations of petroleum hydrocarbons were detected but at levels that likely would not trigger regulatory action or affect soil disposal or worker health and safety (Stellar Environmental Solutions 2005a). Lead was again detected at concentrations just above the potentially hazardous criterion were the soil to be disposed of off-site, but not at a level considered hazardous if the soil were to remain undisturbed on-site. The source of lead contamination is unknown (possibly contaminated fill emplacement [e.g., river dredge spoils], aerial deposition [e.g., from vehicle exhaust], former on-site uses [e.g., shipyard], or contaminated river water). A primary concern with elevated lead concentrations is the requirement for profiling any excavated soil that is to be disposed of off-site to ensure that the soil is disposed of at an appropriate facility based on the results of state (Waste Extraction Test [WET]) and federal (Toxicity Characteristic Leaching Procedure [TCLP]) testing methodologies to determine the leachable (soluble) fraction of lead from the soil. Where the leachable fraction exceeds the 5-milligrams-per-liter regulatory criteria, the soil must be disposed of at a hazardous waste landfill. To ensure appropriate profiling and off-site disposal of the soil, a construction-generated waste soil (and groundwater) management plan for the Raley's Landing project was submitted to the Yolo County Environmental Health Department on June 3, 2005 (Stellar Environmental Solutions 2005b). This plan presents the protocols and procedures for post excavation stockpile sampling and disposal fate based on the results of the sampling.

Groundwater samples in the River 2 area and vicinity monitoring well water samples contain dissolved metals concentrations that exceed criteria for discharge to the surface or to surface water (Stellar Environmental Solutions 2005a).

The Phase II ESA concludes that detected metals and petroleum hydrocarbons are at concentrations that would not likely trigger regulatory agency actions (if contaminated soil or water is not generated as waste during construction); therefore, this area would not be a recognized environmental condition (REC) in its current condition. However, if subsurface soils are excavated as part of future development of the site, the potential exists for the soil to be considered hazardous waste if disposed of off-site, and its management and disposal would require compliance with regulatory requirements. This latter scenario therefore would be considered a REC. Similarly, any site groundwater dewatering required as part of future site development would require that known contaminated groundwater be discharged under appropriate regulatory permit or disposed of at an appropriate treatment storage or disposal facility (Stellar Environmental Solutions 2005a). The June 2005 waste soil and groundwater management plan submitted to Yolo County (Stellar Environmental Solutions 2005b) presents construction-related dewatering plans that describe on-site water management testing, permits, and disposal options.

RIVER 3 AREA

The River 3 area is currently vacant but includes five deteriorated asphalt surfaces and one electrical power pole (Kwest Engineering 2003). The western portion of the River 3 area was previously occupied by single-family and multifamily dwellings and a motel (Anderson Geotechnical Consultants 1989). Anecdotal evidence suggests that one of the single-family residences was used as an automobile repair facility. During demolition of that residence, a 500-gallon tank UST was discovered, but no contamination was detected in samples collected where this tank had been removed (Kwest Engineering 2003). All the residences were removed by the late 1980s.

The eastern portion of this area was previously occupied by River Lines, as stated previously in the description of the River 2 area. The portion of the River Lines property in the River 3 area contained the former shipyard area and shipbuilding facility and portions of the property containing the ASTs and associated pipeline. Contaminants associated with the shipbuilding facility may include materials such as fuels, paint, solvents, and metals. A metal plating operation (Capitol Plating) with known metals contamination was previously located two blocks north of the River 3 area.

In 1989, Anderson Geotechnical Consultants conducted an initial evaluation of the site to assess potential contamination. In the River 3 area, borings were collected in three general areas: near the former ASTs, near the former shipbuilding and repair facility, and at locations south of E Street. The samples collected in these locations were tested for various constituents based on the contaminants that might be expected to be present.

Samples collected near the ASTs were tested for VOCs and semivolatile organic compounds. Lead, zinc, chromium, and oil and grease were detected in some of the soil samples (Anderson Geotechnical Consultants 1989).

Samples collected near the shipbuilding facility were analyzed for heavy metals and mercury only. Lead was detected at concentrations (up to 400 mg/kg) in excess of the California potentially hazardous waste criterion (50 mg/kg) if the soil is disposed of off-site. Analysis for soluble lead, to confirm whether any excavated soil would be required to be disposed of off-site as hazardous waste, was not conducted. The source of the lead in soil is unknown, as stated previously in the discussion of the River 2 area. Groundwater samples collected near the shipbuilding area had concentrations of aluminum, total chromium, iron, and lead possibly elevated above Regional Water Board-designated levels established to protect groundwater and surface waters (Anderson Geotechnical Consultants 1989).

Additional borings were collected along the south side of E Street to confirm that concentrations of copper, nickel, and zinc had not migrated south from Capitol Plating into the River 3 area via groundwater. Detectable concentrations of copper, nickel, and zinc were observed in the soil samples collected at groundwater elevation. However, these detected concentrations are considered normal ambient levels, so it appears that contaminants from the soil at Capitol Plating have not migrated and resulted in contamination in the River 3 area (Anderson Geotechnical Consultants 1989).

In 2004, an additional 12 borehole samples were collected in the River 3 area to evaluate soil and groundwater disposal options, with the expectation that future development of the site would likely include excavations and grading that would generate waste soil, requiring disposal, and require dewatering that would generate fluids requiring off-site discharge or disposal. Some petroleum hydrocarbons as diesel and motor oil were detected in the soil samples and the one groundwater sample but at levels below that which would be considered to be of regulatory significance. No VOCs were reported above the detection limit (Stellar Environmental Solutions 2005c).

Arsenic and lead were reported at elevated concentrations in the two samples analyzed for metals and were reanalyzed for soluble concentrations. Both samples had soluble lead (but not arsenic) above the California hazardous waste criterion but were found to be below the federal hazardous waste criterion. The limited data suggest that some or all of the soil contemplated for off-site disposal during redevelopment of the River 3 area would be classified as California-hazardous, and specialty-licensed contractors and trucks would be required for managing and transporting the waste. This waste can be disposed of either in a California Class I landfill or at an equivalent out of state (e.g., Nevada or Utah) federal hazardous waste landfill. A soil sampling plan was prepared for Yolo County (Stellar Environmental Solutions 2005b) that presents procedures and protocols to profile the soil for transport and off-site disposal at an appropriate landfill. At the time of soil profiling, the relatively small area of soil piles that appear to have been placed on the site, as well as the waste drill cuttings from the November 2004 sampling, should be consolidated and sampled with the soil to be excavated as part of redevelopment (Stellar Environmental Solutions 2005c).

The detected metals and petroleum hydrocarbons are at concentrations that would not likely trigger regulatory agency actions (if contaminated soil or water is not generated as waste during construction); therefore, this scenario would not be a REC in its current condition. However, if subsurface soils are excavated as part of the future development of the site (such as that associated with the proposed project), the potential exists for the soil to be considered hazardous waste (based on the analyses completed), and its management and disposal would thus require compliance with regulatory requirements. This scenario would therefore be considered a REC. Similarly, any site groundwater dewatering in support of future site development would require the known contaminated groundwater to be discharged under appropriate regulatory permit or disposed of to a treatment storage and disposal facility. The June 2005 waste soil and groundwater management plan submitted to Yolo County (Stellar Environmental Solutions 2005b) presents construction-related dewatering plans that describe on-site water management testing, permits, and disposal options.

ADDITIONAL DATA

In addition to the information provided above, EDAW searched the EPA's Envirofacts Web site, the State Water Resources Control Board's (State Water Board's) Geotrack Web site, and the Yolo County Health Department's Web site to confirm and update information presented in these site investigations. The Envirofacts Web site presents information from several regulatory agencies and databases, including those for the EPA, DTSC, and Office of Emergency Services. According to these sources, only the former ARCO gas station, at 490 West Capitol Avenue, was listed as having a case report for leaking USTs, which is identified on the State Water Board's Web site (State Water Resources Control Board 2005). The case is listed as closed. No other sites on the Raley's Landing project site are listed in any of the regulatory databases.

3.9.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

The following sources document potential hazardous conditions at the project site and were reviewed for this analysis:

- available literature, including documents and Web-based information published by city, county, state, and federal agencies;
- applicable elements from the *City of West Sacramento General Plan* and the *Washington Specific Plan* and the EIRs prepared for these documents; and
- the ESAs and other documents that evaluate the potential for site contamination at the Raley's Landing project site listed in Table 3.9-1.

Project activities were evaluated against the hazardous materials information gathered from the above sources to determine whether any risks to public health and safety or other conflicts would occur.

THRESHOLDS OF SIGNIFICANCE

For the purposes of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on the State CEQA Guidelines. A hazards and hazardous materials impact is considered significant if implementation of the proposed project would do any of the following:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

IMPACT ANALYSIS

IMPACT 3.9-1 **Hazards and Hazardous Materials — Use of Hazardous Materials.** *Implementation of the proposed project would involve the temporary storage, use, and transport of hazardous materials at the project site during construction activities. In addition, because the project proposes commercial uses, it is likely that some facilities (e.g., dry cleaners, photo processors) could use hazardous materials during operation. However, use of hazardous materials at the site would comply with local, state, and federal regulations. Therefore, impacts related to creation of significant hazards to the public through routine transport, storage, use, disposal, and risk of upset would not occur. Therefore, this impact is considered* ***less than significant****.*

Development of the project site with residential, office space, hotel accommodations and a conference center, parking, and commercial/retail uses would involve the temporary storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, paint) during construction activities. In addition, commercial uses associated with project operation could include facilities such as dry cleaners or photo processors that could use and routinely transport hazardous materials on and off the project site. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol and Caltrans, whereas use of these materials is regulated by the DTSC, as outlined in Title 22 of the CCR. The project applicant, builders, contractors, business owners, and others would be required to use, store, and transport hazardous materials in compliance with local, state, and federal regulations during project construction and operation. Facilities that would use hazardous materials on-site after the project is constructed would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. Because the project would implement and comply with existing hazardous material regulations, impacts related to creation of significant hazards to the public through routine transport, use, disposal, and risk of upset would not occur with project development. Therefore, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.9-2 **Hazards and Hazardous Materials — Exposure of Construction Workers, Residents, and Others to Hazardous Materials.** *Implementation of the proposed project could disturb existing contaminated areas during site grading, excavation, and construction of project-related utilities and building footings, which could inadvertently expose construction workers, residents, and others, or the environment, to hazardous materials in soils, including petroleum hydrocarbons and heavy metals. Similarly, construction activities that require dewatering to maintain adequate construction conditions could intercept potentially contaminated groundwater. Therefore, this impact is considered* ***significant****.*

As discussed in the “Existing Conditions” section, several locations on the Raley’s Landing project site have detectable concentrations of petroleum hydrocarbons and heavy metals in subsurface soils and groundwater. With the exception of one seemingly anomalous soil sample taken in the River 3 area, lead concentrations were measured at levels that are not considered hazardous under existing conditions but that could be classified as hazardous based on landfill-disposal-acceptance criteria applied to soil to be disposed of off-site. Although the ESAs conducted for the four areas found that the detected metals and petroleum hydrocarbons are at concentrations that would not likely trigger regulatory action requiring cleanup, when subsurface areas are excavated, the potential exists for the soil to be considered hazardous. Similarly, groundwater encountered during excavations (groundwater depths are expected to be between 2 and 18 feet below the ground surface at the site) could be considered hazardous.

Grading and construction for project-related utilities and building footings would occur during the development of the site. The project may require that excavated surface soils be exported off-site for disposal. Soil disturbance during construction could disperse contamination into the environment and expose construction workers or the public to contaminants. Shallow soils containing elevated concentrations of petroleum hydrocarbons, heavy metals, or other chemicals could present a health and safety risk to workers and the public if excavated and exposed during grading operations. Exposure to elevated concentrations of chemicals in soil that are considered hazardous could cause various short-term and long-term health effects. Possible effects could be acute (immediate, or of short-term severity), chronic (long-term, recurring, or resulting from repeated exposure), or both. Health effects would be specific to each hazardous substance present.

Given the shallow groundwater depths at the site, below-grade construction activities are likely to require dewatering to maintain adequate construction conditions. Based on previous land uses on the project site, elevated concentrations of contaminants in groundwater, and known former leaking USTs, these activities could encounter potentially contaminated groundwater. Exposure to hazardous materials in contaminated groundwater could also cause various short-term or long-term health effects in persons exposed to the contamination. Work in those areas of the project site that are known to have elevated concentrations of contaminants could pose adverse health and safety risks for workers or the public if the contaminants are not identified and properly managed. A greater risk may be present in those areas in which undocumented releases may have occurred.

Further, old or abandoned USTs may still be present on the project site. As discussed in Section 3.9.2, documentation of the removal of the USTs associated with the former Shell gas station in the River 1 area was unavailable during the record search for that site. Similarly, there could be a UST under the former Broderick Market building on the Washington Street property. The contents of these tanks, if they exist, could be hazardous. A previously unknown UST, uncovered or disturbed during excavation, could threaten the health and safety of site workers. A leaking UST, if discovered, could contaminate the groundwater and could pose a possible explosion hazard. If a UST were discovered during construction activities, it would have to be closed in place or removed. Removal activities could pose both health and safety risks, such as the exposure of workers, tank handling personnel, and the public to tank contents or vapors.

Potential exposure of construction workers, residents, and others to hazardous materials on the project site is considered a **significant impact**.

Mitigation Measures 3.9-2a: Conduct On-Site Soil Management

To minimize potential exposure of construction workers and bystanders to detected lead in soil during on-site soil excavation and grading activities, the project applicants shall implement the following soil management procedures:

- A best management practices (BMP) document shall be prepared and implemented for the project. The BMP document shall be included in construction bid and contract specifications and shall focus on construction-phase management of soil and water. The project applicants shall retain the services of a qualified environmental firm to implement this program. The BMP document shall be subject to review and approval by the Yolo County EHD.

- During excavation and grading, open areas of dirt and soil stockpiles shall be either wetted or covered if fugitive dust emissions are observed.

- Construction vehicle wheels shall be brushed/cleaned as necessary to ensure that potentially contaminated soils are not incidentally tracked off-site.

Mitigation Measure 3.9-2b: Conduct Soil Disposal Sampling and Profiling

To ensure that excavated soils are transported and disposed of in accordance with appropriate waste classifications, excavated soil shall be temporarily stockpiled on-site, sampled for laboratory analysis, and profiled into appropriate disposal facilities based on the analytical results. This procedure may be conducted in several phases, depending on construction schedule and space/access constraints. The sampling program shall be designed to satisfy the more restrictive nonhazardous landfill sampling criteria, which is generally one four-point composite soil sample from each 500–1,000 cubic yards of excavated soil. The likely sole analysis would be for total lead, with soluble (WET) analyses to be conducted if total concentrations exceed the applicable waste criteria guidelines. The sampling program shall be subject to review and approval by the Yolo County EHD.

Mitigation Measure 3.9-2c: Manage Soil Transport and Disposal

Before construction work begins, the project applicants shall obtain an EPA Hazardous Waste Generator identification number. Any excavated soil to be disposed of in a Class I facility (as determined by stockpile profile sampling) shall be transported by waste haulers with the appropriate local, state, and federal permits/licenses. Each truckload shall be accompanied by a completed Uniform Hazardous Waste Manifest, copies of which shall be sent to the appropriate regulatory agency. This approach shall be subject to review and approval by the Yolo County EHD.

Mitigation Measure 3.9-2d: Conduct Waste Groundwater Management

Groundwater pumped from project excavation shall be containerized in appropriate tanks and sampled for potential site analytes of concern. Following results confirming nonhazardous classification, the water shall be disposed of or discharged in one of the following means: off-site treatment/recycling, discharge to the storm sewer under appropriate permit, discharge to the local sanitary sewer district under appropriate permit, or discharge to ground surface (i.e., for construction dust control) under approval of appropriate agencies. This approach shall be subject to review and approval by the Yolo County EHD.

Mitigation Measure 3.9-2e: Prepare Hazardous Materials Contingency Plan

A hazardous materials contingency plan shall be prepared that describes the necessary actions that would be undertaken if analytes of concern are identified in groundwater pumped from project excavation and if previously unidentified hazardous substances are encountered during construction. The contingency plan shall identify evidence that could indicate potential hazardous materials contamination, including soil discoloration, suspicious odors, presence of USTs, or buried building material; include measures to protect worker safety if signs of contamination are encountered; identify sampling and analysis protocols for various substances that might be encountered (e.g., volatile organic compounds, hydrocarbons, heavy metals); and list required regulatory agency contacts if contamination is found. The project applicants shall retain the services of a qualified environmental firm to prepare the contingency plan, and the plan shall be incorporated into the construction bid and contract specifications for the project. The hazardous materials contingency plan can be included as a component of the BMP document described in Mitigation Measure 3.9-2a.

With implementation of these mitigation measures, disturbance and likely release of hazardous materials during project construction would no longer create a significant hazard to the public; therefore, this impact would be reduced to **less than significant**.

3.10 HYDROLOGY AND WATER QUALITY

This section evaluates information regarding hydrology and water quality. It presents a summary of the regulatory context, describes the existing hydrologic conditions at the project site, and contains an analysis of the hydrology and water quality impacts of the proposed project.

3.10.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify land areas subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedance probability (AEP) event (i.e., the 100-year flood event). Specifically, where levees provide flood protection, the levee crown is required by FEMA to have 3 feet of freeboard above the 1-in-100-AEP water surface elevation, except in the vicinity of a structure such as a bridge, where the levee crown must have 4 feet of freeboard for a distance of 100 feet upstream and downstream from the structure.

U.S. Army Corps of Engineers Sacramento and San Joaquin River Basins Comprehensive Study

The Sacramento and San Joaquin River Basins Comprehensive Study is a joint effort by the State Reclamation Board and the U.S. Army Corps of Engineers (USACE), in coordination with federal, state, and local agencies, groups, and organizations in California's Central Valley, to develop a comprehensive plan for reducing flood damage and providing environmental restoration to the Sacramento and San Joaquin River basins. The comprehensive study is a regional planning effort, rather than a regulatory program; however, consistency with its goals and objectives is important for any project affecting flood control in the Sacramento and San Joaquin River basins. The proposed Raley's Landing project is located in the Lower Sacramento River Region of the comprehensive study area.

Federal Antidegradation Policy

The federal antidegradation policy has been in existence since 1968. The policy is designed to protect existing uses and water quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions: (1) existing instream uses and the water quality necessary to protect those uses shall be maintained and protected; (2) where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and (3) where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Federal Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act of 1972 (CWA) is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA address water quality. These are discussed below. Wetland protection elements administered by the USACE under Section 404 of the CWA, including permits to dredge or fill wetlands, are discussed in Section 3.11, "Biological Resources."

Water Quality Criteria and Standards

Under federal law, EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (40 CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: identified designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. In California, EPA has granted the California State Water Resources Control Board (State Water Board) and its nine regional water quality control boards (regional water boards) the authority to identify beneficial uses and adopt applicable water quality objectives.

National Pollutant Discharge Elimination System Permit Program

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. The discharge of wastewater to surface waters is prohibited unless an NPDES permit issued by the applicable regional water board allows that discharge. NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

In November 1990, EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase 1 of the permitting program applies to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons. Phase 1 also applies to stormwater discharges from a large variety of industrial activities, including general construction activity if the project would disturb more than 5 acres. Phase 2 of the NPDES stormwater permit regulations, which became effective in March 2003, requires that NPDES permits be issued for construction activity for projects that disturb between 1 and 5 acres. Phase 2 of the municipal permit system, known as the NPDES General Permit for Small Municipal Separate Storm Sewer System (MS4s), requires small municipal areas with fewer than 100,000 persons to develop stormwater management programs. The regional water boards in California are responsible for implementing the NPDES permit system (see additional information below, under “NPDES Permit System”).

Section 401 Water Quality Certification or Waiver

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain a certificate from the appropriate state agency stating that the fill is consistent with the state’s water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirement is delegated by the State Water Board to the nine regional water boards.

Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives for specific pollutants after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The TMDL prepared by the state must include an allocation of allowable loadings to point and nonpoint sources, with consideration of background loadings and a margin of safety. The TMDL must also include an analysis that shows the linkage between loading reductions and the attainment of water quality objectives. EPA must either approve a TMDL prepared by the state or, if it disapproves the state's TMDL, issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated.

Safe Drinking Water Act

Under the Safe Drinking Water Act (SDWA) (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary Maximum Contaminant Levels (MCLs). MCLs and the process for setting these standards are reviewed triennially. Amendments to the SDWA enacted in 1986 established an accelerated schedule for setting drinking water MCLs.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Central Valley Regional Water Quality Control Board

The State Water Board was created by the California Legislature in 1967. Its mission is to ensure the highest reasonable quality for waters of the state while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water quality protection and water allocation enables the State Water Board to provide comprehensive protection for California's waters. There are nine regional water boards in California, working under the State Water Board. The Sacramento metropolitan area, including West Sacramento, is under the jurisdiction of the Central Valley Regional Water Board. Several plans, policies, and regulations implemented wholly or in part by the regional water boards are identified in the discussion below.

Water Quality Control Plan for the Sacramento-San Joaquin River Basins

The Central Valley Regional Water Board, under the authority of the state Porter-Cologne Water Quality Control Act and pursuant to the CWA, is responsible for authorizing activities that have the potential to discharge wastes to surface water or groundwater resources. The Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan), adopted by the Central Valley Regional Water Board in 1998, identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and San Joaquin River basins. State and federal laws mandate the protection of designated beneficial uses of water bodies. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050[f]). Major issues and the general conditions of existing beneficial uses of the Sacramento River are as follows:

- **Water Supply:** The Sacramento River is a source of municipal water supply for the Cities of Sacramento and West Sacramento and is the ultimate source of water for the proposed Raley's Landing project. As described in Section 3.7, "Public Utilities," West Sacramento relies on surface water to meet demand, primarily as diversions from the Sacramento River under several agreements with various agencies. The Bryte Bend Water Treatment Plant diverts water from the Sacramento River at the plant's intake structure and provides the main source of treated supply for the City of West Sacramento (City).

- **Agricultural Supply:** Extensive use is made of the Sacramento River for agricultural purposes, which may include farming, horticulture, or ranching. Primary uses are for irrigation and stock watering.

- **Recreation:** Water-dependent recreation uses of the Sacramento River include swimming, wading, waterskiing, sport fishing, and a variety of other activities that involve contact with the water. Noncontact (water-enhanced) recreation uses include picnicking, camping, pleasure boating, hunting, bird watching, education, and aesthetic enjoyment.

- **Groundwater Recharge:** Water from the Sacramento River recharges the Colusa and East Yolo groundwater subbasins along their eastern sides. Its contribution is not substantial, however, because of the relatively flat groundwater gradient in this area and the relatively low permeability of the basin materials.

- **Fish and Wildlife:** The Sacramento River and the waterways of the Sacramento-San Joaquin River Delta provide important habitat for a diverse variety of aquatic life and terrestrial wildlife. This habitat includes temporary habitat and migration routes for anadromous and other migratory species, as well as permanent habitat for resident species.

- **Navigation:** The Sacramento River near West Sacramento is used for shipping, travel, and other transportation by private and commercial vessels.

The Basin Plan identifies specific narrative and numeric water quality objectives for a number of physical properties (e.g., temperature, turbidity, and suspended solids); biological constituents (e.g., coliform bacteria); and chemical constituents of concern, including inorganic parameters, trace metals, and organic compounds. Water quality objectives for toxic priority pollutants (i.e., select trace metals and synthetic organic compounds) are identified in the Basin Plan and in the California Toxics Rule (CTR), which was adopted in May 2000. The CTR is discussed below.

State Nondegradation Policy

In 1968, as required under the federal antidegradation policy described previously, the State Water Board adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

> a. Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
>
> b. Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements which would ensure (1) pollution or nuisance would not occur and (2) the highest water quality consistent with the maximum benefit to the people of the state would be maintained.

California Toxics Rule

In May 2000, the State Water Board adopted and EPA approved the CTR, which establishes numeric water quality criteria for approximately 130 priority pollutant trace metals and organic compounds. The State Water Board subsequently adopted its State Implementation Policy (SIP) of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries. The SIP outlines procedures for NPDES permitting for toxic pollutant objectives that have been adopted in Basin Plans and in the CTR.

NPDES Permit System

The State Water Board and Central Valley Regional Water Board have adopted specific NPDES permits and/or waste discharge requirements (WDRs) for a variety of activities that have potential to discharge wastes to waters of the state or to land. Dischargers are required to eliminate or reduce nonstormwater discharges to storm sewer systems and other waters. The State Water Board's statewide stormwater permit for general construction activity (Order 99-08-DWQ, as amended) is applicable to all land-disturbing construction activities that would disturb more than 1 acre. Construction activities such as clearing, grading, stockpiling, and excavation are subject to the statewide general construction activity NPDES permit. The proposed project would expose greater than 1 acre of disturbed construction area to stormwater runoff and thus would require an NPDES stormwater permit for general construction activity.

The NPDES permit requires filing of a notice of intent (NOI) with the regional water board to discharge stormwater and preparation and implementation of a storm water pollution prevention plan (SWPPP) to control contaminated runoff from temporary construction activities. The SWPPP provides the plans and specifications for erosion and sediment best management practices (BMPs), means of waste disposal, methods for implementation of approved local plans, postconstruction sediment and erosion control BMPs and maintenance responsibilities, nonstormwater management BMPs, and BMP performance inspection requirements.

NPDES permits require the implementation of design and operational BMPs to reduce the level of contaminant runoff during construction. The permit also requires dischargers to consider the use of permanent postconstruction BMPs that will remain in service to protect water quality throughout the life of the project. Types of BMPs include source controls, treatment controls, and site planning measures.

The NPDES regulations also require implementation of appropriate hazardous materials management practices to reduce the possibility of chemical spills or release of contaminants, including any nonstormwater discharge to drainage channels.

Construction dewatering activities that discharge to surface waters require NPDES authorization under the regional water board general order for dewatering and other low-threat discharges to surface waters (Order No. 5-00-175). This permit requires submittal of an NOI by the applicant prior to the activity that verifies the dewatering will occur in compliance with applicable water quality objectives. The permit contains terms and conditions for discharge prohibitions, specific effluent and receiving water quality limits, solids disposal activities, and water quality monitoring protocols. The Central Valley Regional Water Board's general NPDES permit for construction dewatering activity (Order 5-00-175) authorizes direct discharges to surface waters up to 250,000 gallons per day for no more than a 4-month period each year.

The Central Valley Regional Water Board also may issue site-specific WDRs, or waivers to WDRs, for certain waste discharges to land or waters of the state. In particular, Central Valley Regional Water Board Resolution R5-2003-0008 identifies activities subject to waivers of reports of waste discharge and/or WDRs for a variety of activities, including minor dredging activities and construction dewatering activities that discharge to land.

All NPDES permits have inspection, monitoring, and reporting requirements. In response to a court decision, the Central Valley Regional Water Board also implemented mandatory water quality sampling requirements in Resolution 2001-046 for visible and nonvisible contaminants in discharges from construction activities. Water quality sampling is now required if the activity could result in the discharge of turbidity or sediment to a water body that is listed as impaired under Section 303(d) because of sediment or siltation or if a release of a nonvisible contaminant occurs. Where such pollutants are known or should be known to be present and have the potential to contact runoff, sampling and analysis are required.

Statewide NPDES Stormwater General Permits for Municipalities

The statewide NPDES stormwater permit for small municipalities (those with fewer than 100,000 persons) (Order 2003-0005-DWQ) requires these municipalities to prepare a stormwater management program (SWMP) that describes the specific management actions to minimize contaminant discharges to the maximum extent practicable and identifies best conventional technology/best available technology requirements to address compliance with water quality standards. The City has prepared a SWMP to comply with statewide NPDES municipal stormwater permit requirements (Larry Walker Associates 2003).

The City of West Sacramento SWMP is composed of seven program elements developed to reduce contaminants discharged into receiving water bodies. The seven program elements of the SWMP are (1) public education and outreach, (2) public participation and involvement, (3) illicit discharge detection and elimination, (4) construction site runoff control, (5) postconstruction stormwater management runoff control in new development and redevelopment, (6) good housekeeping for municipal operations, and (7) industrial facilities stormwater pollution prevention. The SWMP includes a time schedule extending through 2008 for developing and implementing specific measures such as specific BMPs and measurable goals for stormwater quality control of development and redevelopment, a stormwater ordinance, construction standards, and development design and review guidelines to reduce contaminants in stormwater runoff.

State Reclamation Board

In addition to FEMA and USACE, the State Reclamation Board has jurisdiction over flood control activities along the Sacramento and San Joaquin Rivers and their tributaries. It maintains jurisdiction over levees, the waterward area between levees, a 10-foot-wide strip adjacent to the landward levee toe, the area within 30 feet of the top of the banks of unleveed channels, and the area within designated floodways adopted by the board. Moreover, activities outside of these limits that, in the board's opinion, could adversely affect flood control also are under the board's jurisdiction. The State Reclamation Board is responsible for ensuring the serviceability of levees and requires permits for any activity that may adversely affect the function of the levees or the capacity of the flood control system.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of West Sacramento General Plan

The following policies from the Public Facilities and Services Element of the General Plan relate to water quality or drainage and are relevant to the proposed project:

- **Policy C.1:** Where practical and economical, the City shall upgrade existing drainage facilities as necessary to correct localized flooding problems.

- **Policy C.2:** The City shall continue to expand and develop storm drainage facilities to accommodate the needs of existing and planned development.

- **Policy C.4:** The City shall, through a combination of drainage improvement fees and other funding mechanisms, ensure that new development pays its fair share of the costs of drainage system improvements.

The following policies from the Natural Resources Element of the General Plan relate to water quality or drainage and are relevant to the proposed project:

- **Policy A.1:** The City shall prohibit the establishment of any new septic systems within the areas where City sewer and water service are available within one mile and shall require that new septic tank installations elsewhere be limited to one acre or larger parcels.

- **Policy A.3:** The City shall not approve new development that has a significant potential for adversely affecting water quality in the Sacramento River, the Deep Water Ship Channel, Lake Washington, or the area's groundwater basin.

- **Policy A.6:** The City shall implement measures to minimize the discharge of sediment into its watercourses.

The following policies from the Health and Safety Element of the General Plan relate to water quality or drainage and are relevant to the proposed project:

- **Policy B.3:** Non-residential development shall be anchored and flood-proofed to prevent damage from the 100-year flood or, alternatively, elevated to at least 12 inches above the localized 100-year flood level.

- **Policy B.5:** New development shall be designed to prevent the diversion of floodwaters onto neighboring parcels.

- **Policy B.6:** Construction of storm drainage improvements shall be required, as appropriate, to prevent flooding during periods of heavy rainfall.

- **Policy B.8:** The City shall cooperate with area reclamation districts and other responsible agencies in the maintenance and improvement of levees and drainage channels.

- **Policy B.11:** The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems.

Washington Specific Plan

There are no policies in the *Washington Specific Plan* that are relevant to hydrology or water quality issues in the project area.

3.10.2 EXISTING CONDITIONS

HYDROLOGY

The proposed project site is located in West Sacramento, just west of the Sacramento River and north of the Deep Water Ship Channel, within the Sacramento River Hydrological Basin, as defined by the California Department of Water Resources (DWR). The project site is located on the generally level alluvial plain of the Sacramento River system. Ground surface elevation is approximately 5 feet above mean sea level. The area lies in the Mediterranean subtropical climate zone. Typical of central California, it has cool, wet winters and hot, dry summers. Annual precipitation averages approximately 17 inches as rainfall that falls primarily in the months of November through April. The Sacramento River is the dominant perennial surface water feature of the area.

Groundwater elevations in the project area are relatively high, and there is no predominant direction of flow of the groundwater. As the surface water elevation of the Sacramento River rises and falls, groundwater levels near the banks also fluctuate. When the Sacramento River is high, the river recharges the groundwater and results in a westerly gradient. When the water levels are lower, the river is recharged by groundwater, resulting in an easterly gradient (City of West Sacramento 1996). Groundwater quality is adequate for domestic and industrial uses, if treated, and is also adequate for agricultural uses (City of West Sacramento 1996).

DRAINAGE

The project site is located in an urbanized yet primarily undeveloped area of West Sacramento. The Washington Street property consists of two large gravel parking lots, with limited vegetation. The River 1, 2, and 3 areas are covered by annual grassland, with the exception of the eastern portion of River 3, which supports remnant riparian forest.

The project site is not located within the jurisdictional boundary of a reclamation district. When no reclamation district or other local entity is responsible for maintaining a levee, the state creates a maintenance area to delineate the location and provides the necessary maintenance itself. The state charges a fee for maintenance and divides that fee among all entities protected by the levee. The portion of the Sacramento River levee in West Sacramento between the I Street Bridge and the Tower Bridge is maintained by the state as part of Maintenance Area 4 (Eckman, pers. comm., 2005). All of West Sacramento, including the project site, is protected from catastrophic flooding up to the predicted 1-in-400 AEP flood by the major adjacent regional flood control levees of the Sacramento River, Deep Water Ship Channel, Yolo Bypass, and Sacramento Bypass. The project site lies in a FEMA-designated Zone X floodplain, indicating that the area could be flooded in a 1-in-500 AEP or greater flood event.

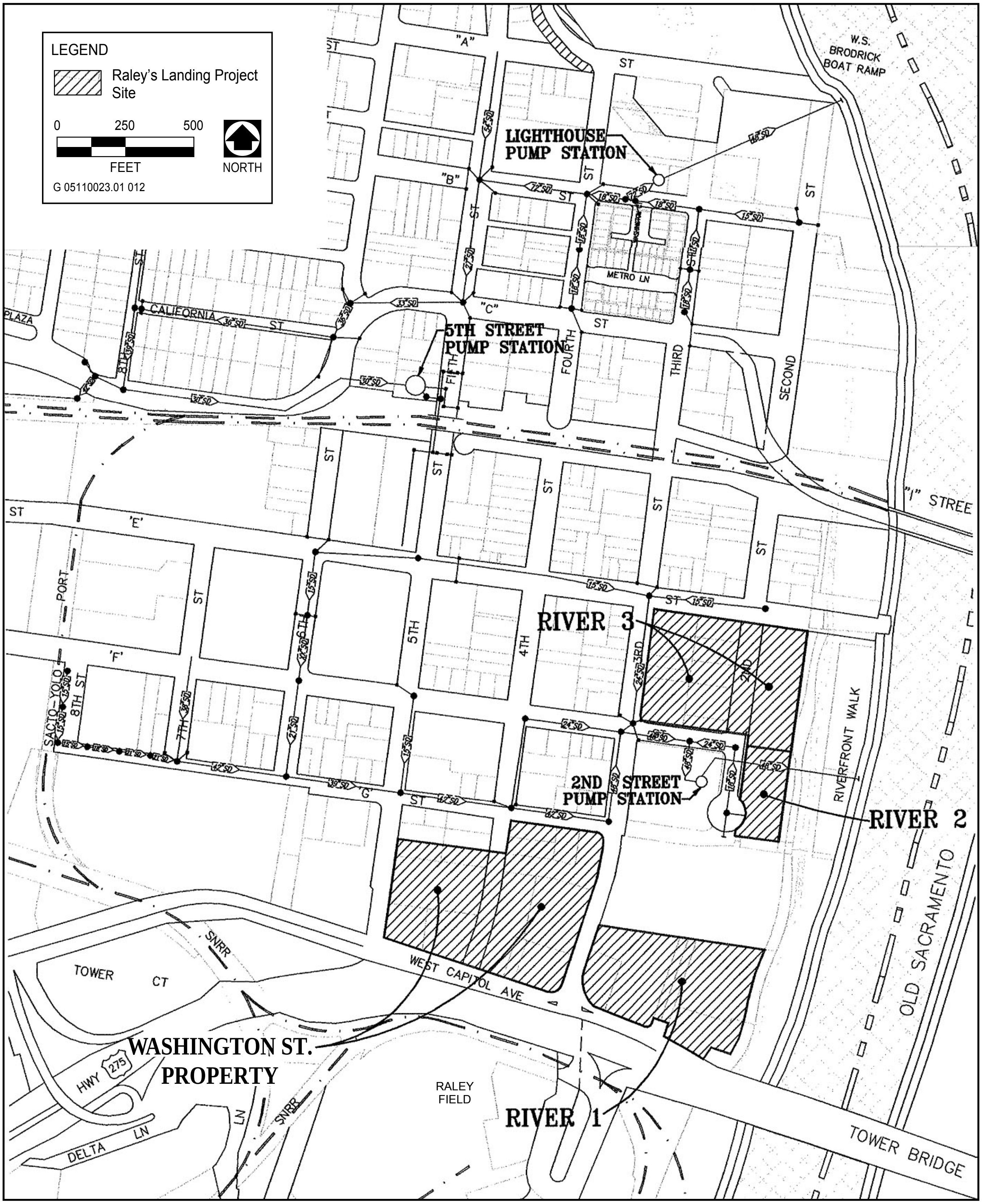
No defined surface drainage features are present on the project site. Stormwater drainage from the project site is conveyed via overland flow to the City's subsurface storm drainage system, which flows to the Second Street pump station, located in the parking garage adjacent to the Ziggurat. The drainage flows from the pump through a 48-inch-diameter pipe and discharges into the Sacramento River (Exhibit 3.10-1). The pump station and associated facilities have adequate capacity to convey and discharge runoff from a 10-year storm event under buildout of the General Plan (City of West Sacramento 1996). According to the City Public Works Department, there are no BMPs in place within the project site boundaries, and the City has not adopted any official BMP guidance (Fabun, pers. comm., 2005). The City is, however, covered by the General MS4 permit (Fabun, pers. comm., 2005). Residents in the project area have reported drainage backup in the neighborhood during storm events.

WATER QUALITY

No water quality data for stormwater runoff are available for the project site. Numerous water quality studies performed for other projects have shown impacts on receiving water caused by stormwater from impervious surfaces. Pollutants associated with residential, commercial, and industrial activities in a watershed include sediment, fertilizers, pesticides, solvents, paints, waste oil, other vehicle fluids, petroleum hydrocarbons, heavy metals, and coliform from human and animal wastes. Stormwater that comes into contact with these pollutants can be transported quickly to and through storm drain systems and discharge to a water body. Pollutants carried as stormwater runoff to the receiving water body can impact the water quality, as well as the physical and biological characteristics of the aquatic habitat characteristic of the receiving water body.

The U.S. Geological Survey (USGS) completed an evaluation of water quality conditions of the Sacramento River in the project area as a component of an overall analysis of conditions in the Sacramento River watershed (U.S. Geological Survey 2000). The evaluation indicated that the Sacramento River generally has excellent water quality that is very low in contaminants. However, historical gold mining activities in areas along upstream tributaries (e.g., Feather River, Yuba River, American River) have left a legacy of mercury contamination because mercury was used extensively to extract gold from ore. The Sacramento River (Knights Landing to the Delta) is included on the CWA Section 303(d) list of impaired waters for diazinon, mercury, and unknown toxicity (Central Valley Regional Water Board 2002).

Table 3.10-1 shows a summary of average concentrations from monthly water samples for conventional physical and inorganic chemical constituents measured in the Sacramento River at Freeport from February 1996 through April 1998 (U.S. Geological Survey 2000). In general, the data indicate that the river is low in total dissolved solids (TDS) as indicated by measurements of electrical conductivity (EC), total hardness, and specific cations and anions. The water has neutral pH, moderate alkalinity, and adequate dissolved oxygen (DO) levels for aquatic organisms. The water from the river is also generally low in nutrients (nitrogen and phosphorus) that can cause nuisance algae and aquatic vascular plant growth. Trace metal content is low in the river. Although mercury is routinely detected, the concentration has not exceeded ambient CTR criteria. Pesticides have been detected in the Sacramento River; however, with the exception of the drinking water standard for carbofuran, there are no applicable regulatory criteria established for the pesticides that have been detected. The California Department of Fish and Game (DFG) has established guidance values for aquatic life chronic (i.e., 4-day-average) criteria applicable to the organophosphate pesticides diazinon and chlorpyrifos. The DFG guidance values and other reference dose values for aquatic life or human health hazards that have been established for many pesticides are generally indicative of the lowest concentrations at which toxic effects have been detected. The average concentration of diazinon in the Sacramento River does not exceed the DFG guidance level of 50 nanograms per liter (ng/L) (California Department of Fish and Game 2000).



Source: Murray Smith & Associates 2005

Existing Storm Drain System **Exhibit 3.10-1**

Water quality in the Sacramento River was also evaluated from 1997 through 2003 as part of DWR's Sacramento River Watershed Program (SRWP) and during varying periods for programs coordinating with the SWRP (Larry Walker Associates 2004). Results indicated that some samples collected from throughout the Sacramento River watershed in 2002–2003 caused toxicity to test organisms; the causes of observed toxicity at these locations has not yet been determined.

Table 3.10-1
Summary of Conventional Water Quality Constituents in the Sacramento River at Freeport, 1996–1998

Constituent	Water Quality Objective	Average Measurement
Conventional Physical and Chemical Constituents		
Temperature	<2.5°F [a]	15.9°C
Flow (cfs)		37,874
EC (µS/cm)		124
DO (mg/L)	7.0 [b]	9.7
DO Saturation (%)	85 [b]	97
pH (standard units)	6.5 to 8.5 [c]	7.7
Alkalinity (mg/L $CaCO_3$)		49
Total Hardness (mg/L $CaCO_3$)		47
Suspended Sediment (mg/L)		54
Calcium (mg/L)	narrative [d]	10.3
Magnesium (mg/L)		5.2
Sodium (mg/L)		6.5
Potassium (mg/L)		1.1
Chloride (mg/L)	500 [e]	4.0
Sulfate (mg/L)	500 [e]	5.3
Silica (mg/L)		16.3
NO_2+NO_3 (mg/L N)	NO_3<10 [f]	0.13
Total Phosphorus (mg/L P)		0.05
Trace Metals		
Arsenic (µg/L)	50 [g]	1.0
Chromium (µg/L)	180 [g]	1.1
Copper (µg/L)	5.1 [g]	1.5
Mercury (µg/L)	0.050 [h]	0.0084
Nickel (µg/L)	52 [g]	1.2
Zinc (µg/L)	120 [g]	1.7
Organic Pesticides		
Molinate (ng/L)	13,000 [i]	<92.7
Simazine (ng/L)	3,400 [j]	<24.3
Carbofuran (ng/L)	40,000 [e], 500 [i]	<31
Diazinon (ng/L)	51 [k]	<28

Table 3.10-1 (continued) Summary of Conventional Water Quality Constituents in the Sacramento River at Freeport, 1996–1998		
Constituent	Water Quality Objective	Average Measurement
Carbaryl (ng/L)	700 [j]	<41
Thiobencarb (ng/L)	1,000 [a]	<47
Chlorpyrifos (ng/L)	14 [k]	<25
Methidathion (ng/L)		<38

Notes: $CaCO_3$ = calcium carbonate.
mg/L = milligrams per liter.
μg/L = micrograms per liter.
MRL = method reporting limit.
μS/cm = microsiemens per centimeter.
ng/L = nanograms per liter.
NO_2 = nitrogen dioxide (nitrate).
NO_3 = nitrogen trioxide (nitrite).
[a] Regional Water Board Basin Plan water quality objective for allowable change from controllable factors
[b] Regional Water Board Basin Plan water quality objective
[c] Regional Water Board Basin Plan water quality objective: <0.5 allowable change from controllable factors
[d] Regional Water Board Basin Plan narrative objective: water shall not contain constituent in concentrations that would cause nuisance or adversely affect beneficial uses
[e] Secondary drinking water maximum contaminant level (MCL)
[f] Primary drinking water maximum contaminant level (MCL)
[g] California Toxics Rule aquatic life criteria for 4-day average dissolved concentration
[h] California Toxics Rule human health maximum criteria total recoverable concentration
[i] California DFG hazard assessment value
[j] EPA Integrated Risk Information System reference dose for drinking water quality
[k] DFG aquatic life guidance value for 4-day average concentration
Source: Constituent measurements from U.S. Geological Survey 2000.

3.10.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

The analysis of potential hydrology and water quality impacts was performed qualitatively based on a review of documents pertaining to the project study area, including the *City of West Sacramento General Plan*, the *Washington Specific Plan*, personal communications with City staff members, and review of the specific project site conditions.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on the State CEQA Guidelines. A hydrology and water quality impact is considered significant if implementation of the proposed project would do any of the following:

- violate any water quality standards or waste discharge requirements;
- 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;

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on-site or off-site;

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site;

- create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

- otherwise substantially degrade water quality;

- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;

- place within a 100-year flood hazard area structures that would impede or redirect flood flows; or

- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam or inundation by seiche, tsunami, or mudflow.

IMPACT ANALYSIS

The proposed project would be supplied with municipal water from the City of West Sacramento, which uses surface water from the Sacramento River as a water source. Groundwater would not be used as a water source for the project site, and no new groundwater wells would be constructed to serve the project. Therefore, groundwater supply and hydrology issues are not discussed further in this section. In addition, because the project site is located in an area that is protected by flood control levees that provide protection from flood magnitudes of up to the 1-in-400 AEP event, potential impacts of regional flooding and inundation also are not discussed further in this section. Some project elements would be located in areas under the jurisdiction of the Reclamation Board. The project applicants would be required to obtain a permit from the Reclamation Board before work is conducted in those areas.

IMPACT 3.10-1	Hydrology and Water Quality — Increased Stormwater Drainage and Localized Runoff, Potentially Causing Localized Flooding. *Implementation of the proposed project would result in an increase in impervious surfaces on the project site, which would lead to an increase in stormwater runoff compared to existing conditions. Although existing storm drain infrastructure is reported to be of sufficient size and capacity to accommodate the anticipated runoff, there are no BMPs currently in place to control peak rates of runoff, such as detention basins. Therefore, this impact is considered* ***significant****.*

Implementation of the proposed project would create additional impervious surfaces (e.g, buildings, sidewalks, paved parking areas) on the project site. The additional runoff caused by the increase in impervious surfaces would lead to an increase in localized stormwater runoff compared to existing conditions. Because the site design process is in the conceptual phase, it is not possible to calculate the exact amount of impervious surface that would be constructed for the project. The existing storm drain infrastructure was designed to accommodate buildout under the *Washington Specific Plan*. Specifically, the Second Street pump station was designed to accommodate the runoff volumes associated with an approximately 7% increase in the runoff coefficient anticipated under the specific plan. (The runoff coefficient is a number that indicates the proportion of volume from a catchment that actually reaches the outlet and that represents variations in surface characteristics, soil type, and slope.) It is expected that implementation of the Raley's Landing project, which anticipates development essentially consistent with that described in the specific plan, would increase the runoff coefficient by the same amount, resulting in an increase in runoff volumes of approximately 7% under both a 10-year and 100-year event (Murray Smith & Associates 2005). The City indicates that it does not anticipate any capacity constraints with the existing storm drainage infrastructure, because it was designed and sized for both existing and future land uses (Collier, pers. comm., 2005). However, the City also indicated that there are no BMPs in place on the project site (Fabun, pers. comm., 2005), including stormwater detention basins or other structures that could attenuate peak flows. Because the project is in the early design phase, drainage plans have not been developed for the project, and specific quantities of additional drainage, if any, are unknown. Although the increase in runoff volumes has been approximated, potential peak flows that could occur on the project site following development are unknown. Consequently, because additional stormwater drainage (specifically peak discharge rates) could cause or contribute to localized flooding, the potential stormwater drainage effects and potential for flooding near the project site are considered **significant**.

Mitigation Measure 3.10-1: Develop and Implement Site-Specific Stormwater Drainage Plans and Specifications

The project applicants shall develop and implement project-specific stormwater drainage plans and specifications. These plans shall be prepared in coordination with the City Department of Public Works. The stormwater drainage plans and specifications shall be approved by the City and shall be implemented as a part of the overall construction activities. The drainage plans shall include a quantitative analysis for drainage and flow control features that are necessary to avoid localized site flooding and integrate project-related stormwater drainage into the City's local drainage conveyance facilities. Potential stormwater drainage control features that could be incorporated into project plans include, but are not limited to, constructing detention basins, directing building downspout runoff over landscaped areas, and using underground stormwater detention tanks.

Drainage plans and specifications shall be submitted to the City of West Sacramento with approval plans. The City shall approve all drainage plans and specifications before the initiation of project construction.

With implementation of this mitigation measure, the project would include drainage control features to control peak rates of runoff from the project site, which would prevent localized flooding; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.10-2	Hydrology and Water Quality — Potential for Short-Term Construction-Related Soil Erosion and Water Quality Impairment. *Implementation of the proposed project could cause short-term water quality degradation associated with construction and site dewatering activities. Areas of exposed or stockpiled soils could be subject to sheet erosion during short periods of peak stormwater runoff, and excavation could require dewatering. Both of these mechanisms could carry soil and construction-related contaminants to storm drains before ultimately being discharged to the Sacramento River. This impact is considered* ***significant****.*

Earth-moving, grading, and construction activities for the proposed project would involve land clearing and soil disturbances, which could leave disturbed areas and stockpiled soils exposed to winter rainfall and stormwater runoff. Although the project site is relatively flat and the potential for soil erosion is low, areas of exposed or stockpiled soils could be subject to sheet erosion during short periods of peak stormwater runoff, allowing temporary discharges of soil and construction-related contaminants to the local storm drain system and ultimately to the Sacramento River. Accidental spills of construction-related contaminants, such as fuels, oils, paints, solvents, cleaners, and concrete, could occur during construction activities at the project site, resulting in surface soil contamination. Discharges of these construction materials and contaminants to the receiving waters during storm events would degrade water quality and, in addition, could lead to short-term impacts on fish and other aquatic life. Because all project-related activities would occur on the land side of the levee, the only mechanism for soils, sediment, and contaminants to reach the Sacramento River is through the storm drain system.

High groundwater conditions or saturated soils would require construction site dewatering during excavations to maintain dry working conditions. Construction dewatering discharges to adjacent land or drainage facilities might contain elevated levels of suspended sediments and other construction-related contaminants. Stormwater runoff and construction dewatering discharges could increase sedimentation in receiving waters, leading to short-term impaired water quality in the Sacramento River. This impact is considered **significant**.

Mitigation Measure 3.10-2: Obtain Authorization for Construction Activity with the Central Valley Regional Water Board and Implement Erosion and Sediment Control Measures as Required

Each general contractor involved with construction activities at the project site shall obtain authorization for construction activity from the Central Valley Regional Water Board through the NPDES stormwater general permit for construction activity. If groundwater elevations are high enough to require dewatering during excavations, general contractors also shall obtain authorization under the construction dewatering NPDES permit or waiver of discharges for dewatering discharge to land. General contractors or representative engineers shall develop and implement a SWPPP for the NPDES permit and submit the appropriate NOIs for all applicable permit processes to the regional water board before beginning construction activities. The SWPPP shall identify, at a minimum:

- the activities that may cause pollutant discharge (including sediment);
- construction BMPs, consistent with requirements of the NPDES permit, to reduce the potential for contaminated runoff, such as limiting ground-disturbing activities during the winter rainfall period, minimizing exposure of disturbed areas and soil stockpiles to rainfall, and minimizing construction work near or within drainage facilities;
- erosion and sedimentation control measures to be implemented, such as soil stabilization, mulching, silt fencing, or temporary desilting basins; good housekeeping practices such as road sweeping and dust control; and diversion measures such as use of berms to prevent clear runoff from contacting disturbed areas; and
- hazardous materials spill prevention and response measure requirements, including lists of materials proposed for use, handling and storage practices, identification of spill response equipment, spill containment and cleanup procedures, and identified regulatory notification protocols and contact phone numbers to be followed in the event of a spill.

All general contractors shall implement measures for construction dewatering activities that ensure that the applicable water quality standards and permit limits are maintained. All applicable NOI(s) and SWPPP(s) shall be prepared before construction is initiated, and implementation shall be ongoing through the construction phase of the project(s). All SWPPPs and plans and specifications for construction of water quality BMPs shall be submitted to the City of West Sacramento for approval. The City of West Sacramento shall inspect for compliance with SWPPP and NPDES permit measures during all construction activities.

With implementation of this mitigation measure, the project would include BMPs to prevent construction-related soil erosion and the release of soil and construction-related contaminants to storm drains and ultimately to the Sacramento River; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.10-3	Hydrology and Water Quality — Potential Long-Term Degradation of Water Quality. *Implementation of the proposed project may degrade water quality in the Sacramento River over the long term through increased deposition of pollutants generated by motor vehicle traffic at the project site and the maintenance and operation of landscaped areas. This impact is considered* ***significant****.*

Implementation of the proposed project could change the long-term potential for contaminant discharges at the project site. There is the potential for the project to cause or contribute to long-term discharges of urban contaminants (e.g., oil and grease, fuel, trash, pesticides, fertilizer) into the City's stormwater drainage system and ultimately the Sacramento River. Water quality degradation from the discharge of urban runoff occurs when stormwater or landscaping irrigation runoff enters the storm drain system carrying contaminants found in urban environments. Stormwater may encounter oil, grease, or fuel that has collected on roadways and parking lots and convey these contaminants to the storm drain system. Water used for irrigation of landscaped areas may encounter pesticides, herbicides, and fertilizer. Water that has encountered these chemicals but that has not been absorbed by plants and soil can enter the storm drain system and be conveyed to receiving waters. The potential discharges of contaminated urban runoff from paved and landscaped areas could increase or could cause or contribute to adverse effects on aquatic organisms in receiving waters. Urban contaminants typically accumulate during the dry season and may be washed off when adequate rainfall returns in the fall to produce a “first flush” of runoff. The amount of contaminants discharged in stormwater drainage from development areas varies based on a variety of factors, including the intensity of urban uses such as vehicle traffic, types of activities occurring on-site (e.g., office, commercial, industrial), types of chemicals used on-site (e.g., pesticides, herbicides, cleaning agents, petroleum byproducts), the pollutants on street surfaces, and the amount of rainfall. Because new urban development is proposed on the project site, and associated urban runoff contaminants could be carried by the City’s drainage system to the Sacramento River, the potential exists for long-term adverse water quality impacts. This impact is considered **significant**.

Mitigation Measure 3.10-3: Implement Long-Term Water Quality BMPs in Design and Operation of Project Drainage Facilities and Landscaped Areas

Project contractors and/or engineers shall include permanent BMPs in the design of drainage facilities and landscaped areas at the proposed project site consistent with the City of West Sacramento SWMP and regulations governing the NPDES stormwater general permit for construction activity. The design and specifications for the proposed project shall include BMPs for on-site source control and treatment to ensure that water quality is protected in the long term. Project engineers shall consult with the City when designing the drainage facilities and associated water quality protection features, and the project applicants shall submit designs of the areas to the City for review and approval before the development plans are approved. The BMPs shall be designed, constructed, and maintained to meet a performance standard established in consultation with the City and shall at least meets all applicable regulations and guidelines regarding stormwater quality and discharges of stormwater to the Sacramento River. BMPs of several types may be included, such as:

- landscaping maintenance guidelines,
- parking lot sweeping requirements,
- roof and pavement drainage and containment,
- catch basins and/or infiltration trenches/pits,
- water/oil separators,
- vegetated or rock-lined swales, and
- water breaks.

With implementation of this mitigation measure, the project would include BMPs that would prevent contributions to the long-term degradation of water quality in the Sacramento River via stormwater discharges; therefore, this impact would be reduced to **less than significant**.

3.11 BIOLOGICAL RESOURCES

This section addresses common and sensitive biological resources that could be affected by implementation of the proposed Raley's Landing project. This evaluation is based on data collected during a reconnaissance field survey conducted by EDAW biologists on April 20, 2005, multiple additional site visits during summer and fall 2005, a review of aerial photographs of the project site (taken by Sacramento County in 2002), a review of the *City of West Sacramento General Plan* (General Plan) (City of West Sacramento 2004) and *Washington Specific Plan Draft EIR* (City of West Sacramento 1995), and a search of the California Department of Fish and Game (DFG) California Natural Diversity Database (CNDDB) (CNDDB 2004) and California Native Plant Society (CNPS) database (CNPS 2003). Both database searches focused on the Sacramento East, Sacramento West, Rio Linda, and Taylor Monument U.S. Geological Survey topographic map quadrangles.

3.11.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration – National Marine Fisheries Service (NOAA Fisheries) have authority over projects that may affect the continued existence of a federally listed (threatened or endangered) species. Section 9 of the federal Endangered Species Act (ESA) prohibits the "take" of federally listed species. "Take" is defined under the ESA, in part, as killing, harming, or harassment. Under federal regulations, "take" is further defined to include habitat modification or degradation where it actually results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Section 7 of the ESA outlines procedures for federal interagency cooperation to conserve federally listed species and designated critical habitat. "Critical habitat" is defined as specific areas that have the physical and biological features that are essential to the conservation of a listed species and that may require special management considerations or protection. Section 7(a)(2) requires federal agencies to consult with USFWS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat.

For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain an incidental take permit under Section 10(a) of the ESA. That section allows USFWS to permit the incidental take of listed species if such take is accompanied by a habitat conservation plan (HCP) that includes components to minimize and mitigate impacts associated with the take. An HCP for the valley elderberry longhorn beetle (VELB) was approved in 1997 for the Raley's Landing project. For more detail on the HCP, see the discussion of VELB under "Special-Status Fish and Wildlife Species," below.

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act (CWA) establishes a requirement that an applicant must obtain a permit before conducting any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries.

Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Many surface waters and wetlands in California meet the criteria for waters of the United States, including intermittent streams and seasonal lakes and wetlands. Pursuant to Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates and issues permits for activities that involve the discharge of dredged or fill materials into waters of the United States.

State Plans, Policies, Regulations, and Laws

California Endangered Species Act

In accordance with the California Endangered Species Act (CESA) and Section 2081 of the California Fish and Game Code, a permit from DFG is required for projects that could result in the take of a species state listed as threatened or endangered. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include "harm" or "harass," as the federal act does. As a result, the threshold for a take under CESA is higher than that under the ESA.

Section 1602 of the California Fish and Game Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by DFG under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by DFG, or use any material from the streambeds, without first notifying DFG of such activity. "Stream" is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. DFG's jurisdiction in altered or artificial waterways is based on the value of those waterways to fish and wildlife. A DFG Streambed Alteration Agreement must be obtained for any project that would result in an impact on a river, stream, or lake.

Section 401 Water Quality Certification/Porter Cologne Act

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredge or fill activity is consistent with the state's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine regional boards. Each of the nine regional water quality control boards must prepare and periodically update basin plans for water quality control in accordance with the Porter-Cologne Act. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. Under the Porter-Cologne Act, wetlands and drainages that are considered waters of the United States by USACE are often classified as waters of the state as well.

Natural Communities Conservation Planning Act

The program enacted in 1991 under the California Natural Communities Conservation Planning (NCCP) Act takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. The NCCP program is broader in its orientation and objectives than CESA and the ESA, which are designed to identify and protect individual species that are already listed as threatened or endangered. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use.

In 1991, Yolo County and its member cities began the process of developing an HCP to obtain an incidental take permit under Section 10(a)(1)(B) of the ESA. In 2001, the participating jurisdictions agreed with a request from

DFG to extend the planning process so that the HCP could be rewritten as an NCCP. That effort is currently under way (City of Davis 2005).

California Fish and Game Code Sections 3503-3503.5 – Protection of Bird Nests and Raptors

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (e.g., hawks, owls, eagles, and falcons), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 also could include failure of active raptor nests resulting from disturbance of nesting pairs.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of West Sacramento General Plan

The City of West Sacramento General Plan (General Plan) Natural Resources Element identifies the following policies that are relevant to the protection of biological resources on the proposed site:

- **Policy C.2:** The City shall support state and federal policies for preservation and enhancement of riparian and wetland habitats by incorporating, as deemed appropriate, the findings and recommendations of the Sacramento Greenway Plan, California Department of Fish and Game, and the U.S. Fish and Wildlife Service into site-specific development proposals.

- **Policy C.3:** The City shall require site-specific surveys to identify significant wildlife habitat and vegetation resources for development projects located in or near riparian or wetland areas.

- **Policy C.4:** The City shall ensure no net loss of riparian or wetland habitat acreage and value by regulating development in and near these habitats and promoting projects that avoid sensitive areas. Where habitat loss is unavoidable, the City shall require replacement on at least a 1:1 basis. Replacement entails creating habitat that is similar in extent and ecological value to that displaced by the project. The replacement habitat should consist of locally-occurring, native species and shall be located as close as possible to the project site.

- **Policy C.5:** To minimize disturbance to wildlife, the City shall require the provision and maintenance of a setback or buffer of at least 100 feet between significant wetland habitat and adjacent development. The buffer shall be landscaped with native or compatible introduced ornamental vegetation and may be used for passive recreation purposes.

- **Policy C.9:** The City shall seek to preserve populations of rare, threatened, and endangered species by ensuring that development does not adversely affect such species or by fully mitigating adverse effects.

- **Policy C.10:** The City shall not approve projects that would cause unmitigable impacts on rare, threatened, or endangered wildlife, or plant species.

- **Policy C.11:** The City shall implement measures to ensure that development in the city does not adversely affect fishery resources in the Sacramento River, Deep Water Ship Channel, and Lake Washington.

- **Policy C.13:** The City shall promote the use of native plants, especially valley oaks, for landscaping roadsides, parks, and private properties. In particular, native plants should be used along the Sacramento River and in areas adjacent to riparian and wetland habitats.

Washington Specific Plan

The Natural Resources Element of the *Washington Specific Plan* identifies the following policies that are relevant to the protection of biological resources on the proposed project site:

- **Policy 5.A.1:** The City shall encourage development along the riverfront in the Washington Plan Area which minimizes adverse effects on existing stands of mature valley oaks and other significant trees.
- **Policy 5.A.2:** The City shall support state and federal policies for preservation and enhancement of riparian habitat in the Washington Plan Area.
- **Policy 5.A.4:** The City shall encourage design of public access and recreation facilities along the riverfront which minimizes impacts on riparian habitat values.
- **Policy 5.A.5:** The City shall implement measures to ensure that development in the Washington Plan Area does not adversely affect fishery resources in the Sacramento River.
- **Policy 5.A.6:** The City shall promote the use of native plants for landscaping roadsides, parks, and private properties.

City of West Sacramento Tree Preservation Regulations

The City of West Sacramento Municipal Code (Chapter 8.24) addresses the removal and preservation of heritage trees, landmark trees, and "street trees" on private and public property in the city. The City of West Sacramento (City) defines a heritage tree as any living tree, including "street trees," with a trunk circumference of 75 inches or more or a native oak with a trunk circumference of 50 inches or more, both measured 4 feet 6 inches from ground level. The circumference of multitrunk trees is based on the sum of the circumference of each trunk. A landmark tree is any tree or stand of trees that is especially prominent or stately or that is of historical significance as designated by the city council. A "street tree" is any tree growing or placed in the tree maintenance strip or public right-of-way.

The City's tree preservation policy states that a person must obtain a tree permit from the City's tree administrator before performing or failing to perform any act that would harm or lead to the unnatural death or destruction of a street, landmark, or heritage tree, including work within the dripline area that would endanger the tree. (The dripline area is the area measured from the trunk of the tree outward to a point at the perimeter of the outermost branch structure of the tree.) The ordinance also describes other requirements, such as the process for replacing lost trees and the need for applications for development projects to be accompanied by a detailed tree plan. For more information on these restrictions and requirements, see the tree preservation policy from the West Sacramento Municipal Code, which is included in this EIR as Appendix G.

3.11.2 Existing Conditions

Vegetation

The project site is located in the city of West Sacramento. Most of the site is undeveloped. The Washington Street property is almost entirely covered by a gravel parking lot used for Raley Field event parking. Gravel lots, annual grassland, urban forest, and remnant riparian forest are the main habitat types on the project site. Each of these habitat types is described briefly below, along with the location in the project area where they occur. The location of sensitive biological resources on the project site is shown in Exhibit 3.11-1. A list of all the plant species observed at the site in presented in Appendix H.

Source: EDAW 2005

Sensitive Biological Resources **Exhibit 3.11-1**

Gravel Lots

The Washington Street property consists of two large gravel lots that are used for parking during events at Raley Field. The lots are largely unvegetated with the exception of weedy vegetation along the northern boundary of the western parcel, and the northwestern corner of the eastern parcel, which is dominated by annual grassland. Several large-canopy trees are present along the northern edge of the parcel and along the portion of Fourth Street passing through the parcel. Various “street trees” are located along the east, west, and south edges of the property.

Annual Grassland

Annual grassland covers the northwestern corner of the eastern Washington Street property, the entire River 1 area, the entire River 2 area, and those portions of the River 3 area not covered with remnant riparian forest or urban forest. All the annual grassland on the project site is mowed on a regular basis for fire hazard management. Typical species observed in the annual grassland include wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), foxtails fescue (*Vulpia bromoides*), and Bermuda grass (*Cynodon dactylon*). A wide variety of weedy forbs including prickly lettuce (*Lactuca serriola*), redstem filaree (*Erodium cicutarium*), black medic (*Medicago polymorpha*), spring vetch (*Vicia villosa*), miniature lupine (*Lupinus bicolor*), and cheeseweed (*Malva neglecta*) are present as well. Sprinkler heads in the River 1 and River 2 areas suggest that the annual grassland on these properties was irrigated in the past, but no evidence of ongoing irrigation was observed during the reconnaissance field survey.

Urban Forest

For this analysis, urban forest trees consist of relatively large canopy trees that are not planted in a regular pattern. Trees that are obviously part of a landscaping program and “street trees” are not typically considered part of this urban forest habitat category. Urban forest trees line the northern edge of the River 3 area, the eastern edge of Second Street in the River 3 area, the western edge of the River 2 area, and the southern edge of the River 1 area. Urban forest trees also occur scattered throughout the River 3 area and on parts of the Washington Street property.

The project site had previously been inventoried by a certified arborist (Sierra Nevada Arborists 2003, 2005a, 2005b) for trees that fall within the specifications of the City of West Sacramento Tree Preservation Ordinance. The Tree Preservation Ordinance, including the definitions of the size and type of tree that should be preserved, was revised recently. Because these definitions have changed, some trees now covered by the ordinance may not have been inventoried. For this reason, this discussion does not include specific tree counts. Trees of the following species are subject to the ordinance and have been identified on the Washington Street property: valley oak (*Quercus lobata*), California black walnut (*Juglans hindsii*), tree of heaven tree (*Ailanthus altissima*), box elder (*Acer negundo*), American elm (*Ulmus Americana*), and London plane tree (*Platanus acerifolia*). California sycamores (*Platanus racemosa*) subject to the ordinance have been identified in the River 1 area.

The tree inventory conducted for the River 2 and 3 areas includes the urban trees on the western portion of the River 3 area and the River 2 area, as well as the remnant riparian forest described below, which occupies much of the eastern portion of the River 3 area. The following trees subject to protection under the City’s ordinance occur in the River 2 and River 3 areas: London plane tree, incense cedar (*Calocedrus decurrens*), valley oak, California pepper tree (*Schinus molle*), black locust (*Robinia pseudoacacia*), California black walnut, American elm, Fremont cottonwood (*Populus fremontii*), and box elder (*Acer negundo*). In addition, these parcels support other trees that are not subject to protection under the City’s tree ordinance.

During the reconnaissance survey on April 20, 2005, six elderberry shrubs were identified in the urban forest of the River 1 area, three shrubs were observed along the western edge of the River 2 area, and 10 shrubs were observed in scattered locations on the River 3 area (Exhibit 3.11-1). However, two of the shrubs in the River 3 area were later found to have been burned during a small fire in July, likely started in a nearby homeless encampment, and appear to be dead.

Remnant Riparian Forest

The portion of the River 3 area located immediately west of the levee along the Sacramento River is dominated by a small but relatively dense and continuous stand of riparian forest, which is similar to the riparian forest once extensive on both banks of the Sacramento River. Although nonnative trees such as black locust are abundant on the site, a large part of the canopy of this riparian forest area comprises native riparian tree species, including valley oak, box elder, Fremont cottonwood, black walnut, and Oregon ash (*Fraxinus latifolia*). Six elderberry shrubs were observed in April 2005 in the understory and around the edges of the remnant riparian forest. However, as stated previously, two of these shrubs were burned during a small fire in July and appear to be dead. Because of its small size, isolation, disturbance, and location in an urban setting, this habitat area cannot strictly be referred to as riparian habitat; however, it does have characteristics of a native forest and has habitat value; therefore, for purposes of this analysis, it is designated as remnant riparian forest. Native riparian forests are rapidly declining throughout California and are of special concern to resource agencies because of the important ecological functions and values they provide to native plant and wildlife species and overall riparian systems. The City of West Sacramento also recognizes the importance of native riparian vegetation by providing specific guidelines for its protection.

WILDLIFE

Most of the project site supports a relatively low diversity of wildlife because the site is located in an urbanized area that is subjected to frequent human activity. Most of the wildlife species observed or expected on the project site are adapted to urban environments, and several are nonnative species. The remnant riparian woodland in the eastern portion of the River 3 area (Exhibit 3.11-1) provides relatively high wildlife diversity compared to the remainder of the project site. Wildlife, including migratory songbirds and raptors, are expected to frequent this portion of the project site and the adjacent riparian areas associated with the Sacramento River because they provide cover, foraging opportunities, and potential nesting habitat. Common wildlife species observed or expected on the project site include western scrub-jay, northern mockingbird, house sparrow, European starling, rock dove, American crow, cliff swallow, barn swallow, western kingbird, opossum, raccoon, and muskrat.

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources include those that are afforded special protection through the CEQA; California Fish and Game Code; and other regulations, including but not limited to CESA, the ESA, and the CWA. Biological resources specifically addressed by the *City of West Sacramento General Plan Policy Document* and the *Washington Area Specific Plan* are also considered sensitive.

Special-Status Species

Special-status species are plants and animals that are legally protected or that are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. These include:

- plant and wildlife species that are listed by the state and/or ESA as rare, threatened, or endangered;
- plant and wildlife species considered candidates for listing or proposed for listing;
- wildlife species identified by DFG as California Species of Special Concern; and
- plants considered by the CNPS to be rare, threatened, or endangered.

Table 3.11-1 provides a list of special-status species potentially occurring in the project study area. This list was developed through a review of biological studies previously conducted in the project study area and observations made during the April 2005 field survey. DFG's CNDDB (CNDDB 2004) and the CNPS database (CNPS 2003) also were reviewed for specific information on documented observations of special-status species previously reported in the project vicinity.

Table 3.11-1
Special-Status Species Potentially Occurring in the Project Study Area

Species	Status[1] USFWS	DFG	CNPS	Habitat and Blooming Period	Potential for Occurrence
Plants					
Dwarf downingia *Downingia pusilla*	--	--	2	Mesic sites in valley and foothill grasslands, vernal pool; blooms March through May	Not expected to occur on-site; no suitable habitat present
Boggs Lake hedge-hyssop *Gratiola heterosepala*	--	E	1B	Freshwater marshes and swamps, lake margins, vernal pools; blooms April through August	Not expected to occur on-site; no suitable habitat present
Rose-mallow *Hibiscus lasiocarpus*	--	--	2	Freshwater marshes and swamps; blooms June through September	Not expected to occur on-site; no suitable habitat present
Legenere *Legenere limosa*	--	--	1B	Vernal pools; blooms April through June	Not expected to occur on-site; no suitable habitat present
Sanford's arrowhead *Sagittaria sanfordii*	--	--	1B	Shallow freshwater marshes and swamps; blooms May through October	Not expected to occur on-site; no suitable habitat present
Insects					
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T	--	--	Elderberry shrubs	Occurs on-site; elderberry shrubs observed on the project site during the April 2005 survey, and surveys in 1996 reported evidence of exit holes in two shrubs on-site
Fish					
Central Valley steelhead *Oncorhyncus mykiss*	T	--	--	Cold freshwater streams with suitable gravel for spawning	Occurs in the Sacramento River near the project site during migration
Sacramento winter-run chinook salmon *Oncorhyncus tshawytscha*	E	E	--	Cold freshwater streams with suitable gravel for spawning	Occurs in the Sacramento River near the project site during migration
Central Valley spring-run chinook salmon *Oncorhyncus tshawytscha*	T	T	--	Cold freshwater streams with suitable gravel for spawning	Occurs in the Sacramento River near the project site during migration
Central Valley fall/late fall-run chinook salmon *Oncorhyncus tshawytscha*	--	CSC	--	Cold freshwater streams with suitable gravel for spawning	Occurs in the Sacramento River near the project site during migration
Sacramento splittail *Pogonichthys macrolepidotus*	DT	CSC	--	Spawning and juvenile rearing from winter to early summer in shallow weedy areas inundated during seasonal flooding in the lower reaches and flood bypasses of the Sacramento River	Could occasionally occur in the Sacramento River near the project site
Reptiles					
Giant garter snake *Thamnophis gigas*	T	T	--	Streams, sloughs, ponds, and irrigation and drainage ditches	Not expected to occur on-site; no known occurrences in the project site vicinity and no suitable habitat on or near the project site

Table 3.11-1 (continued)
Special-Status Species Potentially Occurring in the Project Study Area

Species	Status[1] USFWS	Status[1] DFG	Status[1] CNPS	Habitat and Blooming Period	Potential for Occurrence
Birds					
Swainson's hawk *Buteo swainsoni*	--	T	--	Nests in riparian forest and scattered trees; forages in grasslands and agricultural fields	Could occur on-site; known to occur in the project vicinity, and suitable nesting and foraging habitat is present
Burrowing owl *Athene cunicularia*	--	CSC	--	Grasslands and agricultural fields	Not expected to occur on-site; no known occurrences in project site vicinity and no evidence found during April 2005 field survey
Bank swallow *Riparia riparia*	--	T	--	Requires vertical banks/cliffs with fine textured/sandy soils near streams, rivers, lakes, ocean	Not expected to occur on-site; no suitable habitat is present
Northern harrier *Circus cyanus*	--	CSC	--	Grasslands, agricultural fields, and freshwater marsh	Could occur on-site; suitable foraging habitat is present
Cooper's hawk *Accipter cooperii*	--	CSC	--	Nests mainly in riparian growths of deciduous trees	Could occur on-site; suitable nesting and foraging habitat is present
White-tailed kite *Elanus leucurus*	--	CSC FP	--	Forages in grasslands and agricultural fields; nests in isolated trees or small woodland patches	Could occur on-site; suitable nesting and foraging habitat is present
Tricolored blackbird *Agelaius tricolor*	--	CSC	--	Nests in dense cattails and tules, riparian scrub, and other low, dense vegetation; forages in grasslands and agricultural fields	Not expected to occur on-site; no suitable nesting habitat is present
Purple martin *Progne subis*	--	CSC	--	Nests in old woodpecker cavities, in tall isolated snags, and in human-made structures in urban environments; inhabits woodlands and low-elevation coniferous forests.	Not expected to occur on-site; no suitable nesting habitat is present

[1] Legal Status Definitions

Federal Listing Categories (USFWS)
- E Endangered (legally protected)
- T Threatened (legally protected)
- DT Recently de-listed from threatened status

State Listing Categories (DFG)
- E Endangered (legally protected)
- T Threatened (legally protected)
- FP Fully Protected (legally protected, no take allowed)
- CSC California Species of Concern (no formal protection)

CNPS Categories
- 1B Plant species considered rare or endangered in California and elsewhere (but not legally protected under ESA or CESA)
- 2 Plant species considered rare or endangered in California but more common elsewhere (but not legally protected under ESA or CESA)

Source: Compiled by EDAW 2005

Sensitive Natural Communities

Sensitive natural communities are those that are of special concern to resource agencies and those that are afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, or Section 404 of the CWA. The resources/communities on the project site considered sensitive by regulatory agencies are the remnant riparian forest and the elderberry shrubs. Elderberry shrubs observed on the project site during the reconnaissance survey are considered sensitive habitat because they are the sole host for VELB, a species federally listed as threatened. The location and extent of the remnant riparian forest, and elderberry shrubs are shown in Exhibit 3.11-1.

Special-Status Plant Species

The CNDDB and CNPS databases include occurrences for five special-status plants in the general vicinity of the project site: dwarf downingia, Boggs Lake hedge-hyssop, rose mallow, legenere, and Sanford's arrowhead. Information on the habitat types in which these species occur is included in Table 3.11-1, above. Because of a lack of suitable habitat, none of these species is expected to occur on the project site.

Special-Status Fish and Wildlife Species

The CNDDB includes occurrences for 15 special-status fish and wildlife species in the general vicinity of the project site (Table 3.11-1). Of these, seven are listed in CESA, the ESA, or both as a threatened or endangered species: VELB, Central Valley steelhead, Sacramento winter-run chinook salmon, Central Valley spring-run chinook salmon, giant garter snake, Swainson's hawk, and bank swallow. The remaining eight species (Central Valley fall/late fall-run chinook salmon, Sacramento splittail, burrowing owl, northern harrier, Cooper's hawk, white-tailed kite, tricolored blackbird, and purple martin) are considered California species of concern by DFG. White-tailed kite is also a fully protected species under state law. There is no suitable habitat for special-status fish species on-site. Special-status wildlife species that could occur on the project site are discussed in further detail below.

Valley Elderberry Longhorn Beetle

The VELB is federally listed as threatened. This species is dependent on blue elderberry shrubs for both food and reproduction. Elderberry shrubs were observed on the project site during the April 2005 survey (Exhibit 3.11.1). Elderberry shrubs with evidence (i.e., exit holes) of VELB have been recorded in the project vicinity (CNDDB 2004) and on the project site in 1996 (see below). The most recent nearby record in the CNDDB for this species is from 1985. At that time, exit holes were observed in elderberry shrubs less than one-half mile north of the project site, on the west bank of the Sacramento River, near its confluence with the American River.

Two elderberry shrubs were present at the northwest corner of the project site (the southeast corner of E Street and Second Street) in 1996. These shrubs had evidence of exit holes. An HCP was submitted and approved for the Raley's Landing project, and USFWS issued the project proponent an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA (effective June 1997) authorizing the potential take of VELB. In compliance with the mitigation in the HCP, the project proponent purchased two units of VELB mitigation habitat from a USFWS-approved mitigation bank. The two elderberry shrubs were transplanted from the proposed Raley's Landing project site to the mitigation bank in December 1997 (Berry, pers. comm., 1997). However, because the project site has not yet been developed, the impacts this activity was intended to mitigate have not occurred.

Swainson's Hawk

The Swainson's hawk is state listed as a threatened species. Swainson's hawks typically nest in riparian habitats or isolated trees bordered by suitable foraging habitat (i.e., grasslands and agricultural fields). Alfalfa, fallow fields, dry and irrigated pastures, and other low-growing row crops are preferred foraging habitats (DFG 1994). There are eight records of nesting Swainson's hawks within 2 miles of the project site (CNDDB 2004). The most recent record within this area is from 1993. At that time, two adults and two juvenile Swainson's hawks were observed at a nest site along the Sacramento River just upstream of the mouth of the American River, approximately 1 mile north of the project site (CNDDB 2004). Swainson's hawk could nest in trees located on and adjacent to the project site during the breeding season (March 1 to September 15). The grasslands on the project site are not expected to be used by Swainson's hawk for foraging because they are relatively small, are highly disturbed, are surrounded by development, and occur in an urban environment where there is intense human activity. No Swainson's hawks or nests were observed during the reconnaissance survey conducted by EDAW in April 2005.

Raptors

All raptors are protected under Section 3503.5 of the California Fish and Game Code, which prohibits take or destruction of raptors, including their nests and eggs. Common and special-status raptor species that could occur on the project site include Swainson's hawk (discussed in more detail above), northern harrier, white-tailed kite, Cooper's hawk, red-tailed hawk, and American kestrel. Potential nesting habitat for all but the northern harrier is available on the project site. The project site is not expected to provide important foraging habitat for these raptors because the grasslands are relatively small, are highly disturbed, are surrounded by development, and occur in an urban environment where there is intense human activity. During the reconnaissance survey conducted by EDAW in April 2005, no raptors or evidence of raptor nests was observed. During a followup survey conducted in September 2005, a red-tailed hawk was observed perched in a tree in the River 3 area; although consistent with the April 2005 reconnaissance survey and additional surveys of the project site, no evidence of raptor nests was observed.

3.11.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

This evaluation is based on data collected during a reconnaissance-level field survey conducted in April 2005, review of aerial photographs, and information from several previously completed documents that address biological resources at the proposed project site and in the vicinity of the proposed project.

For the purposes of the impact analysis, it is assumed that all portions of the project site would be converted to dense urban uses and that all natural habitat on-site would be lost.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on the State CEQA Guidelines. A biological resources impact is considered significant if implementation of the proposed project would do any of the following:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by DFG, USFWS, or NOAA Fisheries;

- have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by DFG or USFWS;

- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means;

- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites;

- result in a conversion of oak woodlands that would have a significant effect on the environment;

- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

- conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan; or

- substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife species to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

IMPACT ANALYSIS

Although the proposed project is bordered by the Sacramento River waterfront, no portion of the proposed project is located on the river side of the levee. The levee provides a topographical and hydrological separation between the river and the project site. All project activities would be located west of the levee, and the Sacramento River would not be affected. Therefore, fisheries would not be affected by the project, and an analysis of fisheries impacts is not necessary. An evaluation of the project's potential effects on Sacramento River water quality is provided in Section 3.10, "Hydrology and Water Quality." Impacts on water quality are considered less than significant after mitigation. The project site does not contain drainages or wetlands or any potential habitat for special-status plant species. Therefore, no impacts on wetlands and other waters of the United States and special-status plant species are discussed in this section. The project site is located in an urbanized area, and it neither connects nor separates any significant wildlife habitat areas (Exhibit 3.11-1). Implementation of the proposed project would not disrupt wildlife movement, use of migratory corridors, or use of nursery sites. This issue is not discussed further in this section.

IMPACT 3.11-1	Biological Resources — Loss of Habitat or Potential Disturbance of Valley Elderberry Longhorn Beetle. *Elderberry shrubs, which provide habitat for the VELB (a species federally listed as threatened), have been identified on the project site. Construction activities could result in disturbance or removal of elderberry shrubs. This impact is considered* ***significant****.*

Nineteen single elderberry shrubs or clusters were observed on the project site during the April 2005 reconnaissance-level survey (Exhibit 3.11-1). However, two of the shrubs in the River 3 area were burned by a small fire in July and appear to be dead. Elderberry shrubs are protected because they provide habitat for VELB, a species federally listed as threatened. Elderberry shrubs with evidence (i.e., exit holes) of VELB were recorded on the project site and less than one-half mile north of the project site in 1996. The shrubs observed during the April 2005 survey were not specifically surveyed for VELB exit holes, although no exit holes were seen during a cursory examination. Construction activities could disturb or remove elderberry shrubs. This impact is considered **significant**.

Mitigation Measure 3.11-1: Establish Buffers and Avoid or Compensate for Removal of Elderberry Shrubs

The following measures, which are consistent with USFWS conservation guidelines for VELB (USFWS 1999), shall be implemented to minimize and mitigate impacts on elderberry shrubs and VELB:

- Before project construction activities begin, the project proponents shall hire a qualified biologist to conduct a preconstruction survey of the project site for elderberry shrubs, including stem counts and other measures, in accordance with USFWS protocol guidelines (USFWS 1999).

- A 100-foot buffer shall be established around elderberry shrubs with stems greater than 1 inch in diameter at ground level. The buffer shall be clearly marked in the field by staking or flagging. No project activity shall occur in the buffer areas.

- If the no-activity buffers around elderberry shrubs are not feasible, the project proponents shall consult with USFWS and may be required to obtain an incidental take permit. During this consultation, an appropriate mitigation plan would be developed and approved by USFWS. Mitigation may include, but would not necessarily be limited to, allowing reduced buffers around shrubs that could potentially be retained on-site; transplanting shrubs to a conservation area; purchasing mitigation credits at an approved mitigation bank; planting seedlings or cuttings at a ratio ranging from 1:1 to 1:6, depending on the number of stems 1 inch or larger in diameter and on whether beetle exit holes are found on the shrubs on-site; and planting native plants associated with elderberry plants at transplant and/or seedling planting sites (USFWS 1999).

- In addition to the above measures, the project applicants may consult with USFWS to determine whether the two units of VELB mitigation credit that were purchased in 1997, as required by the HCP and incidental take permit for the project completed at that time, could be used as mitigation credit toward the potential take of the additional VELB habitat that has grown on the project since 1997. Because project activities that would have affected VELB were never implemented, the project proponents, with USFWS authorization, may be able to apply the two units of VELB mitigation credit that it previously purchased as partial credit toward mitigation for impacts on VELB habitat that is present on the project site.

With implementation of this mitigation measure, elderberry shrubs would be avoided or, if necessary, compensated for; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.11-2 Biological Resources — Loss or Disturbance of an Active Swainson's Hawk Nest. *The proposed project site supports potential nesting habitat for Swainson's hawk (a species state listed as threatened). Large, mature trees present on the project site could provide nesting habitat for Swainson's hawk. Construction activities associated with the proposed project could result in the removal of trees with active nests and/or disturbance of nesting Swainson's hawk, potentially resulting in nest abandonment and mortality to chicks or eggs. This impact is considered **significant**.*

Eight Swainson's hawk nest sitings have been reported within a 2-mile radius of the project site (CNDDB 2004). In July 1993, two adults and two juveniles were observed nesting approximately 1 mile north of the project site along the Sacramento River, just upstream of the mouth of the American River.

The proposed project would not result in a significant loss of Swainson's hawk foraging habitat because the grasslands on the project site are highly disturbed, are surrounded by development, and occur in an urban environment where there is intense human activity.

Although potential foraging habitat is limited in the vicinity of the project site, Swainson's hawks could nest in the area because they have been recorded nesting in urbanized areas elsewhere in Yolo County. During the breeding season (March 1 to September 15), Swainson's hawks could nest in one of the large, mature trees located on or adjacent to the project site (Exhibit 3.11-1). Therefore, the removal of nesting trees, if occupied during the breeding season, could result in the loss of active Swainson's hawk nests. Construction activities also could disturb nearby nesting pairs, resulting in nest abandonment and mortality to eggs or chicks. This impact is considered **significant**.

Mitigation Measure 3.11-2: Identify and Avoid Active Swainson's Hawk Nests

The following mitigation measures shall be implemented to minimize and mitigate impacts on active Swainson's hawk nests:

- If project construction, including tree removal, begins during the Swainson's hawk breeding season (March 1 to September 15), the project applicants shall hire a qualified biologist to conduct preconstruction surveys in suitable nesting habitat within one-half mile of the project site to identify active Swainson's hawk nests. To the extent feasible, the survey shall be conducted in accordance with the guidelines provided in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). At a minimum, a survey shall be conducted within 14 days before construction activity begins.

- If no active Swainson's hawk nests are found in the survey area, a letter report documenting survey methods and findings shall be submitted by the biologist conducting the surveys to the City of West Sacramento and DFG within 1 week following completion of surveys and before ground-disturbing activities are initiated. No further mitigation for disturbance of nest sites would be required.

- If active nests are found, impacts shall be avoided by establishing appropriate buffers. No project construction activity shall commence in the buffer area for a particular nest until a qualified biologist confirms that the nest is no longer active. DFG guidelines recommend implementing one-quarter- or one-half-mile buffers, but the size of the buffer may be adjusted if a qualified biologist and DFG determine that doing so would not be likely to adversely affect the hawks using the nest. Monitoring of the nest by a qualified biologist may be required if the effectiveness of the available buffer is in question and construction activity could adversely affect the hawks using the nest.

With implementation of this mitigation measure, removal of trees with active Swainson's hawk nests and disturbance of nesting Swainson's hawks would be avoided, preventing nest abandonment and mortality to chicks and eggs; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.11-3 **Biological Resources — Loss or Disturbance of an Active Raptor Nest.** *Raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code. Large, mature trees present on the project site could provide nesting habitat for raptors. Construction activities associated with the proposed project could result in the loss or disturbance of an active raptor nest. This impact is considered* ***significant****.*

Raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code. A variety of raptors, including white-tailed kite, Cooper's hawk, red-tailed hawk, and American kestrel, could nest on or near the project site.

The proposed project would not result in a significant loss of foraging habitat for northern harrier, white-tailed kite, Cooper's hawk, red-tailed hawk, and American kestrel because the grasslands on the project site are highly disturbed, are surrounded by development, and occur in an urban environment where there is intense human activity.

Although potential foraging habitat is limited in the vicinity of the project site, these raptors could nest in the area because they have been recorded nesting in urbanized areas elsewhere in Yolo County. During the breeding season (February 15 to September 15), these raptors could nest in one of the large, mature trees located on or adjacent to the project site (Exhibit 3.11-1). Therefore, the removal of nesting trees, if occupied during the breeding season, could result in the loss of active raptor nests. Construction activities also could disturb nearby nesting pairs, resulting in nest abandonment and mortality to chicks or eggs. This impact is considered **significant**.

Mitigation Measure 3.11-3: Conduct Preconstruction Surveys for Nesting Raptors, and Avoid Active Nests during Construction

The following measures shall be implemented to minimize and mitigate impacts on nesting raptors:

- If project construction activity, including tree removal, would commence during the general raptor breeding season (February 15 to September 15), the project applicants shall hire a qualified biologist to conduct preconstruction surveys in areas of suitable nesting habitat within 500 feet of project activity. Surveys shall be conducted within 10 days before the commencement of construction activity.

- If no active raptor nests are found in the survey area, a letter report documenting survey methods and findings shall be submitted by the biologist conducting the surveys to the City of West Sacramento within 1 week following the completion of the surveys and before ground-disturbing activities are initiated. No further mitigation for disturbance of nest sites would be required.

- If active nests are found, impacts shall be avoided by establishing appropriate buffers. No project construction activity shall commence within the buffer area of a particular nest until a qualified biologist confirms that the nest is no longer active. DFG guidelines recommend implementation of 500-foot buffers, but the size of the buffer may be adjusted if a qualified biologist and DFG determine that doing so would not be likely to adversely affect the raptor species using the nest. Monitoring of the nest by a qualified biologist may be required if the effectiveness of the available buffer is in question and construction activity could adversely affect the hawks using the nest.

With implementation of this mitigation measure, active raptor nests would be avoided, and nest abandonment and resulting mortality to chicks and eggs would be prevented; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.11-4	Biological Resources — Removal, Disturbance, or Degradation of Remnant Riparian Habitat. *Construction activities associated with the proposed project would result in removal, disturbance, or degradation of the remnant riparian habitat located in the easternmost portion of the River 3 area. Riparian habitat is considered a sensitive habitat by DFG and receives protection under the California Fish and Game Code and in the General Plan. This impact is considered **significant**.*

A stand of remnant riparian forest is located in the River 3 area, in the northeastern portion of the project site (Exhibit 3.11-1). This area is considered moderate-quality wildlife habitat because it provides cover and food resources for a wide variety of wildlife species. Riparian habitat is considered a sensitive habitat by DFG. In addition, the General Plan addresses protection of riparian habitat. Policy C.4 of the Natural Resources Element requires no net loss of riparian or wetland habitat.

Implementation of the proposed project would result in removal, disturbance, or degradation of riparian habitat in the project area. This impact is considered **significant**.

Mitigation Measure 3.11-4: Protect Riparian Habitat at the Project Site, and/or Replace Riparian Habitat at a Suitable Off-Site Location Receiving Long-Term Protection

To reduce the impact on riparian habitat, the project applicants shall implement the following measures:

- Where feasible, minimize removal of riparian vegetation, and establish the maximum setback or buffer possible between construction activities and the outer edge of the riparian habitat to be retained in the River 3 area. The setback area shall remain fenced with temporary fencing throughout the construction period.

- Where removal of riparian habitat is necessary, the removal shall be limited to the minimum amount needed to achieve the project's objectives.

- For unavoidable removal of riparian habitat and encroachment on remaining riparian habitat, implement tree preservation and replacement measures identified in the City's Tree Preservation Ordinance (see Mitigation Measure 3.11-5). In addition, transplanting and replacement plantings of elderberry shrubs identified in Mitigation Measure 3.11-4 require planting and protection of associated native plant species, including riparian species. Planting ratios are identified for associated native species in the USFWS conservation guidelines for VELB (USFWS 1999) and range from 1:1 to 2:1 for each compensatory elderberry seedling or cutting planting.

With implementation of this mitigation measure, riparian habitat at the project site would be protected or, if necessary, replaced and provided long-term protection off-site; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.11-5	Biological Resources — Potential Direct Loss or Temporary Disturbance of Protected Trees. *Implementation of the proposed project could result in the direct loss or temporary disturbance of landmark, heritage, or street trees that qualify for protection under the City's Municipal Code. This impact is considered **significant**.*

Construction activities associated with development of the project site could result in the direct loss or temporary disturbance of trees that meet the criteria for landmark, heritage, or street trees under the City's Municipal Code. Mature trees are present throughout the project site. Loss or disturbance of valley oaks or other significant trees could conflict with tree protection requirements in the City's Municipal Code. This impact is considered **significant**.

Mitigation Measure 3.11-5: Avoid or Protect Landmark, Heritage, and Street Trees on the Project Site Where Possible, and Obtain Tree Removal Permit for Those Trees That Cannot Be Avoided

The following measures are consistent with the City's Tree Preservation Ordinance and are designed to minimize and mitigate impacts on protected trees on the project site:

- The project applicants shall contact the City tree administrator to discuss proposed activities (i.e., pruning, potential cutting of roots, tree removal) that may affect a landmark, heritage, or street tree and, if deemed necessary, the tree administrator will inspect the site of the proposed activity. After initial consultation between the applicants and the tree administrator, the tree administrator shall confirm whether a permit is required. If it is determined that a permit is required, the applicants shall apply for a permit. The application shall include the information described in Ordinance 8.24.080 and shall be signed by the property owners and their authorized agents. See Appendix G for more details regarding the contents of the application.

- The project applicants shall submit, along with their application for project development, a detailed tree plan. The tree plan shall contain the information detailed in Ordinance 8.24.090, including a contour map showing the location, size, species, and condition of all trees located on the property proposed for development; identification of the trees proposed to be preserved and those heritage, landmark, and street trees proposed to be removed and the reason for their removal; description of the measures to be followed to ensure survival of heritage, landmark, and street trees during construction; a program for the preservation of these trees during and after completion of the project; and a program for the replacement of any trees proposed to be removed. See Appendix G for more details regarding these requirements.

- Protected trees shall be retained to the extent feasible, possibly in conjunction with mitigation for remnant riparian habitat identified in Mitigation Measure 3.11-4. Setbacks adequate to allow the continued health and survival of the tree shall be provided around the base of all trees to be retained, and grading, construction, and creation of impervious surfaces shall be prohibited within the dripline.

- The project applicants shall implement the required replacement plantings and any other mitigation measures deemed necessary to compensate for the impact at a site deemed appropriate by the City in accordance with its Tree Preservation Ordinance. This activity may be taken in conjunction with any tree plantings conducted as part of Mitigation Measure 3.11-4, described above.

- Any newly planted replacement trees required by the permit shall be monitored by a qualified biologist for 3 years following planting to ensure an adequate survival rate, and reports on the monitoring result shall be submitted to the City annually. In accordance with the City's Tree Preservation Ordinance, the project applicants shall be responsible for replacing any replacement trees that die within 3 years of the initial planting. Trees planted in conjunction with VELB mitigation identified in Mitigation Measure 3.11-4 shall be monitored in compliance with USFWS conservation guidelines for VELB (USFWS 1999).

With implementation of this mitigation measure, the project would comply with the City's Tree Preservation Ordinance, ensuring the protection or, if necessary, replacement of protected trees; therefore, this impact would be reduced to **less than significant**.

3.12 VISUAL RESOURCES

This section describes the existing visual resource setting of the Raley's Landing project site, the regulatory background that applies to the proposed project, and the potential impacts on visual resources from implementation of the project.

3.12.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to visual resources are applicable to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Scenic Highway Program

The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. There are no state-designated scenic highways in the immediate vicinity of the project site (Caltrans 2005). The nearest state-designated roadway is State Route (SR) 160. SR 160 parallels the Sacramento River and is designated scenic between the Contra Costa County boundary and the City of Sacramento boundary on the south side of the city. The portion of SR 160 closest to the project site is located approximately 2 miles to the southeast; however, the nearest portion considered scenic is located approximately 7 miles south of the project site. The project site is not visible from any part of SR 160.

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of West Sacramento General Plan

The *City of West Sacramento General Plan* (General Plan) identifies the following policies that are relevant to the protection of visual resources on the proposed project site:

- **Policy A.1:** The City shall endeavor to maintain and enhance the distinctiveness and integrity of the various neighborhoods and districts within West Sacramento.

- **Policy A.3:** The City shall establish the enhancement of the riverfront along the Sacramento River as a major priority.

- **Policy B.1:** The City shall seek to preserve the trees and other vegetation along the banks of the Sacramento River for their aesthetic qualities and environmental and ecological values.

- **Policy B.4:** The City shall promote the development of important visual and scenic areas along the riverfront, including around the barge canal, for public access, including water-related activities.

- **Policy C.1:** The City shall respect existing neighborhood scale and character when infilling and/or upgrading existing residential neighborhoods.

- **Policy C.2:** The City shall promote the creation of well-defined residential neighborhoods in newly-developing areas. Each of these neighborhoods should have a clear focal point, such as a neighborhood shopping center, park, school, or other open space and community facility, and should be designed to promote pedestrian convenience. To this end, the City shall encourage the use of existing West Sacramento neighborhoods, including the modified grid street system, as models for the planning and design of new residential neighborhoods.

- **Policy C.5:** The City shall attempt to maintain and enhance the historic character of Old Broderick.
- **Policy C.6:** The visual impact of automobiles should be minimized in all new development and in the Central Business District.
- **Policy D.1:** The City shall endeavor to protect the tree canopy created by mature trees in existing developed areas and in newly developing areas.
- **Policy D.2:** The City shall require that all new development incorporate the planting of trees and other vegetation to extend the vegetation pattern of older adjacent neighborhoods into new development.
- **Policy D.3:** The City shall use street trees to enhance and soften the visual character of special and important streets within West Sacramento.
- **Policy D.4:** The City shall identify appropriate streets for inclusion of landscaped medians.

City of West Sacramento Zoning Ordinance

The City of West Sacramento (City) Zoning Ordinance identifies the following performance standard relevant to the reduction of lighting impacts on the proposed project site:

- Lighting shall utilize the Illuminating Engineers Society of North America (IESNA) standards when reviewing exterior lighting for commercial and industrial zones of the City.

City of West Sacramento Design Review Process

The City of West Sacramento Zoning Code requires that all new buildings in areas covered by design guidelines adopted by the city council be subject to the City's design review process (Section 17.69.020). This requirement would apply to the Raley's Landing project. The design review process is initiated when the project proponent submits an application for design review to the Community Development Department. Under the zoning code, the community development director is designated as the design review administrator. The application for design review must contain plans, drawings, and narrative describing the proposed project and an analysis of compliance with relevant design guidelines.

Once the application is received, the design review administrator reviews the application and makes a determination of whether the application is complete. If the application is considered incomplete, the zoning code allows for the design review administrator and the project proponent to conduct multiple submittal and review cycles until the application is considered complete. Ultimately the design review administrator either approves or denies the application based on the project's consistency or inconsistency with applicable design guidelines.

Design guidelines and policies and requirements related to project design applicable to the Raley's Landing project are included in the *Washington Specific Plan*, the PD-30 text, and other sources. Applicable guidelines, policies, and requirements are extensive and address a wide range of design issues, including building height, mass, and form; appearance of building frontage; preservation of view corridors; building materials; lighting; landscaping; and signage. A portion of the relevant guidelines, policies, and requirements from the PD-30 text and the *Washington Specific Plan* are summarized below. As stated above, during the design review process, the design review administrator must approve or deny a project based on an evaluation of consistency with all applicable design guidelines.

Public involvement is incorporated into the design review process (zoning code section 17.69.070). After receipt of the initial application for design review, a notice of the application is sent to all property owners within 500 feet of the parcel in question. A notice of submittal of the design review application must also be posted at the project site. Once notice is posted, the public may submit comments on the project's conformity with design guidelines via letter to the design review administrator. The public also may appeal decisions of the design review administrator to the city council.

PD-30 Text

The text associated with the City's PD-30 zoning overlay identifies the following performance standards that are relevant to the protection of visual resources on the proposed site:

- 4.20 Height Limitations: No building or structure shall exceed 18 stories or 270 feet.
- 4.25 Landscaping: Every site on which a building is placed shall be landscaped according to plans approved by the Director of the Community Development Agency. Such landscaping shall cover a minimum of ten percent (10%) of the site with twenty-five percent (25%) of the ten percent (10%) being in the parking area.
- 4.50.40 Illumination: Illuminated signs shall not allow reflection onto residential uses.

Washington Specific Plan

The *Washington Specific Plan* identifies the following policies that are relevant to the protection of visual resources on the proposed project site:

- **Policy 6.A.2:** The City shall seek to preserve the vital qualities of existing, stable residential areas in the Washington Plan Area and shall encourage new development to recreate these qualities.
- **Policy 6.A.3:** The city shall ensure that the main entrances into the Washington Plan Area provide distinctive, well-landscaped gateways into the community.
- **Policy 6.C.1:** The City shall respect existing neighborhood scale when infilling and/or upgrading existing residential neighborhoods in the Washington Plan Area.
- **Policy 6.D.1:** The City shall promote the planting of street trees in those parts of the Washington Plan Area without such trees.
- **Policy 6.D.2:** The City shall promote the installation of street lighting systems in the Washington Specific Plan Area that enhance the streetscape and contribute to the safety and security of the area.
- **Policy 6.D.3:** The City shall require that all new development incorporate the planting of trees and other vegetation to extend the established vegetation pattern of the Washington Specific Plan Area.
- **Policy 6.D.4:** The City shall endeavor to protect the tree canopy created by mature trees in the Washington Specific Plan Area.
- VII Building Frontages: Building massing directly adjacent to the street shall be 36 feet in height. Portions of buildings higher than 36 feet shall be further recessed from the ground floor building face at least twenty (20) feet. Buildings higher than 36 feet shall meet the maximum ground floor setback criteria.

3.12.2 EXISTING CONDITIONS

The following sections present a summary of the visual character of the proposed project site and surrounding area. The text is accompanied by photographs of representative views of the project site and the surrounding area, taken during site visits in April and July 2005. The locations from which these photographs were taken are shown in Exhibit 3.12-1. All exhibits are presented together at the end of this section.

REGIONAL AND LOCAL VISUAL CHARACTER

The flat topography of the Sacramento Valley allows long-distance views of mountain ranges, skylines, freeways, and nearby tall buildings from many places in the City of West Sacramento and contribute to the regional visual character of the city. On clear days, Mt. Diablo, the Coast Ranges, the Sierra Buttes, and the Sierra Nevada are visible from points in the city. Several freeways are also visible from these points. Interstate 5 (I-5) and U.S. Highway 50 (U.S. 50) are predominantly visible from the north and northeastern areas of the city. U.S. 50 passes through the city from east to west.

The city of Sacramento is located east of the project site, directly across the Sacramento River. Old Sacramento and downtown Sacramento are visible from the shore of the river, as well as from parts of the project site (Exhibit 3.12-2, Viewpoint 1). The Sacramento downtown skyline and building profiles are visible from the project site.

VISUAL CHARACTER OF THE SURROUNDING AREA

The proposed project is located in the Washington Specific Plan area, near the city's northeastern boundary. The area is historically known as the Broderick area. It is bounded by A Street on the north, an elevated segment of SR 275 on the south, Sixth Street and Eighth Street on the west, and the Sacramento River on the east. The elevated segment of SR 275 forms a high visual barrier separating most of the Washington Plan Area from the rest of West Sacramento. The levee along the edge of the Sacramento River blocks visual access to or from the river. The Washington Specific Plan area is visually isolated and divided in half by the Union Pacific Railroad (UPRR) right-of-way that follows the D Street route. These railroad tracks are elevated on a berm that creates an internal visual and physical barrier in the area. Because of the flatness of the area and the peripheral barriers SR 275, the Sacramento River levee, and the UPRR berm, views of adjacent areas are generally obstructed and few long-range views are available from the interior of the specific plan area.

A historic grid pattern prevails throughout the project area. Many blocks have sidewalks; others have only segments of sidewalks. Several of the streets, houses, and structures that line the streets are poorly maintained. There is not consistent street planting or lighting in this portion of the Washington Specific Plan area. Only the streetlights on Third Street are continuous.

Many of the properties in the Washington Specific Plan area have not been well maintained, and the result is an appearance of blight in some areas, although many of the substandard structures have been razed and removed, leaving vacant properties, and others have been renovated or replaced with new structures. Few structures are in prime condition. The poorly maintained or unkempt character of the area was part of the reason that the area was designated a part of the West Sacramento Redevelopment Project Area in the 1980s (City of West Sacramento 1996).

River Walk Park, a continuous pedestrian and bicycle linkage, is located along the Raley's Landing project's eastern boundary. The park's promenade runs south from approximately one block south of the I Street Bridge to the Tower Bridge. The park provides West Sacramento residents and the entire region with access to the Sacramento River (Exhibit 3.12-2, Viewpoint 2). In addition, River Walk Park provides an important interface between private development and recreational amenities located along the riverfront.

VISUAL CHARACTER OF THE PROJECT SITE

The proposed project site is generally located between an older residential neighborhood to the west and the Sacramento River to the east. The site is bounded by E and G Streets on the north; West Capitol Avenue on the south; Fifth, Fourth, and Third Streets on the west; and the Sacramento River on the east. The Ziggurat, an 11-story, 400,000-square-foot office building constructed in 1998, is located between the various project areas, near Third and G Streets, but is not part of the proposed project. Its distinctive ziggurat (i.e., stepped pyramid) design dominates the skyline (Exhibit 3.12-3, Viewpoint 3). A six-story parking garage is located adjacent to the Ziggurat.

Most of the Washington Street property is used as a gravel parking lot for River Cats baseball games and other events held at Raley Field (Exhibit 3.12-3, Viewpoint 4). When not used for event parking, the area is locked and vehicles cannot enter. Other portions of the property are undeveloped and vegetated with native and nonnative grasses and trees. Several large-canopy trees occur along the boundary of the area, and along the portion of Fourth Street passing through the site. Several residences are located immediately north of the Washington Street property, the Raley's Landing corporate headquarters is located across Fifth Street to the west, the River 1 area (see below) and the Ziggurat are located to the east, and West Capitol Avenue provides the southern boundary.

The River 1 area is an undeveloped parcel of land located west of River Walk Park and the Sacramento River and south of the Ziggurat. West Capitol Avenue provides the southern boundary to the parcel, and the Washington Street property is located to the west. Several large-canopy trees grow on the southern edge of the parcel along West Capitol Avenue. This parcel is predominately flat and is at a slightly lower elevation than the Ziggurat in part because soil has been removed from the site in the past (Exhibit 3.12-4, Viewpoint 5).

The River 2 and River 3 areas are undeveloped parcels of land located north of the Ziggurat and west of River Walk Park (Exhibit 3.12-4, Viewpoint 6; Exhibit 3.12-5, Viewpoint 7). The River 2 area is located east of the existing Ziggurat parking garage and has no dense vegetation, although some trees and shrubs grow along Second Street. The River 3 area lies north of the parking garage and is densely vegetated with trees and shrubs. Residences and parcels of vacant land are located north and west of the River 3 area. Both the River 2 and River 3 areas slope down from east to west because of the raised river levee to the east.

VIEWS OF THE PROJECT AREA

Views from Old Sacramento

Old Sacramento consists primarily of retail shops, restaurants, nightclubs, museums, and areas for outdoor activities. Several restaurants line and overlook the Sacramento River waterfront. The proposed project site is visible from the restaurants that line the waterfront and from various unobstructed points within Old Sacramento (Exhibit 3.12-5, Viewpoint 8). The Sacramento River is located in the foreground view, and River Walk Park, the levee, trees on both sides of the levee, the project site, and the Ziggurat and associated parking structure are located in the middleground views. Background views are obstructed by the levee, trees, and the Ziggurat; no background features are visible.

Views from the Tower Bridge

The Tower Bridge, located southeast of the project site, is an important landmark for both Sacramento and West Sacramento. With visually prominent, 105-foot-tall towers supporting it, the bridge spans the Sacramento River and serves as a pedestrian and motor vehicle route between West Sacramento and downtown Sacramento. The project site is visible from the roadway and sidewalk of the Tower Bridge (Exhibit 3.12-6, Viewpoint 9). The River Walk Park, the River 1 area, and the Sacramento River are located in the foreground views, and the Ziggurat and the River 2 area are located in the middleground views. Currently, the Ziggurat is the only building visible near the project site. The River 3 area and the Washington Street property also are located in the middleground views, but they would be located furthest from the bridge.

Views from Nearby Residences

Several nearby residences have immediate views of the project site (Exhibit 3.12-6, Viewpoint 10; Exhibit 3.12-7, Viewpoint 11). These include homes along Third Street and E Street across from the River 3 area and homes along G Street adjacent to the Washington Street property. Views from these nearby homes would be of the portion of the project site in the immediate vicinity and would typically be limited to the Washington Street property and the River 3 area.

Views from U.S. 50

U.S. 50 is located approximately 0.75 mile south of the project site. Views of the site are located in the middleground to background views. The Sacramento River is located in the foreground to middleground views. The Ziggurat and the Tower Bridge are located in the middleground views and are immediately perceptible because of their design, height, and color. The visibility of the project site from U.S. 50 is primarily for motorists traveling westbound; the views of eastbound motorists are typically obstructed by the westbound freeway lanes (Exhibit 3.12-8, Viewpoints 13 and 14).

Views from Interstate 5

In the project vicinity, I-5 roughly parallels the Sacramento River on the east side of the river. Views of the project site from I-5 are located in the middleground to background views. The Ziggurat and the Tower Bridge are located in the middle and background views and are immediately perceptible because of their design, height, and color. The Ziggurat and the Tower Bridge are the only structures along I-5 that are apparent in the West Sacramento skyline. Motorists traveling on southbound I-5 typically have better views of the project site compared to northbound motorists because views are not obstructed by the adjacent freeway lanes and associated traffic (Exhibit 3.12-9, Viewpoint 15). Portions of I-5 near the junction with U.S. 50 do not have views of the site because of the depressed alignment of the interstate. However, at some elevated locations—for example, at the merge ramp from U.S. 50 eastbound to I-5 northbound—the Ziggurat and the area where project buildings would enter the skyline are clearly visible. (Exhibit 3.12-9, Viewpoint 16).

Light and Glare

The only notable existing source of light on the project site is the portable lighting used on the Washington Street property for parking during a nighttime event at Raley Field. Most of the artificial lighting in the project area emanates from the Ziggurat and from local residences. Street lighting also contributes light to the project area. Typical sources of nighttime light include structure illumination, interior lighting, decorative landscape lighting, lighted signs, and streetlights. Vehicle headlamp illumination also contributes to nighttime lighting. Various, more distant land uses also emit ambient light that reaches the project site, including Old Sacramento, the Tower Bridge, and Raley Field during night events.

During the day, sunlight reflecting from structures and windows and motor vehicles is the primary source of glare. The surface of the Ziggurat generates glare in the immediate vicinity during bright days. Windows associated with existing homes adjacent to the project site and passing and parked cars on the adjacent streets or at the Washington Street property also may generate localized glare under certain circumstances. Reflections off windows and other glass surfaces are also the primary sources of nighttime glare in the project vicinity.

SHADOWS

The angle of the sun varies, depending on the time of year and time of day; however, in the northern hemisphere, the sun always arcs across the southern portion of the sky. During winter, the sun is lower in the southern sky, and during summer months, the sun can be overhead at midday. In winter, the sun rises and sets to the south of true east and west. As the sun travels from east to west, it stays lower in the sky, casting longer shadows compared to other times of the year. At midday, the position of the sun is directly south, so its shadow extends to the north and is at its shortest. The pattern of shadows is similar in summer, but because the arc the sun travels starts and ends farther north and is higher in the sky in summer, shadows do not extend as far. Because of the climate in the Central Valley, midday and afternoon shade in summer can be beneficial. In the winter, however, access to sunlight can be beneficial. Currently, the only potential for substantive shadows to be generated at the project site results from the Ziggurat, the associated parking structure, and large-canopy trees at various locations in the area.

3.12.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

This visual impact analysis is based on an evaluation of the project description provided in Chapter 2, “Description of the Proposed Project,” of this DEIR, and applicable policies in the General Plan, the *Washington Specific Plan*, the City Zoning Ordinance, and the PD-30 text that would influence the design and appearance of the project. In addition, the proposed project was reviewed for its overall visual impacts using the standards of quality, consistency, and symmetry typically used for a visual assessment.

Vantage points used to assess changes to the visual character of the project site after project implementation were chosen to represent typical views of the project site as seen from various locations. The vantage points (Exhibit 3.12-1) selected for the visual analysis were chosen based on viewer exposure, sensitivity, and use. These vantage points include views from Old Sacramento, the Tower Bridge, nearby residences, I-5, and U.S. 50. All the key vantage points have direct views of the project site. It should be noted that although some vantage points may not have a direct view of the ground surface at the project site, proposed buildings would be visible from these locations.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant visual/aesthetic impact. These thresholds of significance are based on the State CEQA Guidelines. A visual resources impact is considered significant if implementation of the proposed project would do any of the following:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings;
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area; or
- create additional shadowing on residential or public spaces during a substantial portion of the day

IMPACT ANALYSIS

IMPACT 3.12-1 Visual Resources — Impacts on a Scenic Vista. *No views on or near the proposed project site are considered scenic vistas. Therefore, development of the proposed project would not alter or obscure a scenic vista. This impact is considered* ***less than significant****.*

A scenic vista is generally considered a view of an area that has remarkable scenery or a natural or cultural resource that is indigenous to the area. The project site and immediate vicinity do not provide any aesthetic resources that would create a scenic vista, because they consist primarily of vacant land with ruderal vegetation, the Ziggurat, and some older residences. Further, because the project site is located in a developed area, it does not provide views of the indigenous natural landscape. Although the Sacramento River is an important local scenic resource, views of the river from the project site are limited by the levee and the Ziggurat, and development is visible in the foreground (Ziggurat), middleground (Tower Bridge, Old Sacramento), and background (downtown Sacramento skyline). This portion of the Sacramento River, as it passes between West Sacramento and Sacramento, is within an urban setting where views are intermittent, depending on the viewpoint and location of intervening structures. The proposed project would add new obstructions to views of the river; however, this would occur only from limited vantage points along the top of the levee. Most potential views of the river from the project vicinity are obstructed by the existing levee. In the project area, the river itself is visible only from the east side of the levee, the levee surface, and buildings and other elevated vantage points. In addition, views of the river are not unique in the region; portions of the river are visible from various vantage points around the community. Overall, there is minimal opportunity for project development to affect or obscure views of scenic vistas located outside the project site. Therefore, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.12-2 Visual Resources — Damage to Scenic Resources within a State Scenic Highway. *The proposed project would not damage scenic resources and is not visible from a state-designated scenic highway. Therefore, this impact is considered* ***less than significant****.*

A scenic resource is generally a resource, landmark, or area that has been noted for its outstanding scenic qualities and is thereby designated and/or protected because of those qualities. A scenic resource within a state scenic highway is a resource that is noted for its outstanding scenic qualities and is visible from a state-designated scenic highway. No scenic resources have been identified on the proposed project site or in the vicinity. The nearest state-designated highway is SR 160, with the nearest portion of the highway designated as scenic located approximately 7 miles south of the project site. The project site is not visible from any portion of SR 160, including the portion designated as scenic. Therefore, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.12-3 Visual Resources — Degradation of Visual Character. *Implementation of the proposed project would substantially alter the visual character of the project site through conversion of undeveloped land to developed urban uses. Assessment of visual quality is a subjective matter, and reasonable people can disagree as to whether such an alteration in the visual character of the project site would be considered a substantial degradation of the visual character. For this analysis, a conservative approach is taken, and the impact on the visual character of the project site is considered* ***significant****.*

Currently, the predominant structures in the project area are the 11-story Ziggurat and the associated six-story parking garage. As described previously, the Ziggurat is located in the center of the project site, near Third and G Street, and its distinctive design dominates the skyline (Exhibit 3.12-3, Viewpoint 3). It is a focal point in the area and can be seen from many vantage points throughout the project area. Several residences along Third Street and other nearby roadways have immediate views of the Ziggurat. The parking garage is considerably smaller and less distinctive than the Ziggurat but remains a prominent feature in the largely undeveloped area.

As stated previously, vantage points used to assess changes to the visual character of the project site after project implementation were chosen to represent typical views of the project site as seen from various locations. These vantage points include views from Old Sacramento, the Tower Bridge, nearby residences, I-5, and U.S. 50 (Exhibit 3.12-1). From Old Sacramento and the Tower Bridge, the project site is visible in the foreground and middleground views. Nearby residences in the project area have immediate foreground views of the project site, and motorists traveling on I-5 and U.S. 50 have middleground to background views of the project site.

In all cases, views of the project site from these vantage points are of undeveloped land (i.e., no structures are present). In many cases, the ground surface of the project site is not visible from these vantage points, but the viewshed above, where project structures would be located, is clearly visible. In some cases, tree canopies are visible in these higher elevation portions of the project site; however, the Ziggurat is the primary feature in the skyline, providing a highly urbanized element to the viewshed.

The proposed project would include the construction of several midrise and high-rise buildings (Exhibits 2-3 and 2-4). The introduction of these buildings would alter the visual character of the area through obstruction of expansive views and the clustering of development, thereby resulting in a “less open” viewshed. The proposed project would follow the typical pattern of midrise and high-rise development in that it would create visible building profiles against the skyline.

The project proposes various heights, forms, designs, materials, and architectural elements, all of which vary according to the development area. (See Chapter 2 for detailed descriptions of the development proposed for the project.) Although the development areas would have differing components, their design would share the goals of creating a mixed-use, pedestrian-friendly linkage with downtown Sacramento and West Sacramento and establishing a new gateway into the city through iconic architecture. The buildings exteriors would consist of various materials, including stone, terra-cotta, brick, precast concrete, metal, wood, and glass. The color palette of the development is expected to focus on earth tones including off-white, beige, tan, brown, and the natural red found in stone. However, accent colors may be used on some surfaces (e.g., trim, moulding) to provide visual interest. The buildings would be designed to be sophisticated in their appearance because the proposed project would be a place of both business and living. Buildings also would be designed using well-established architectural styles so that they appear of high quality and fitting with surrounding structures well into the future. Green or open space areas, promenades, and landscaped areas would connect the development areas to the urban streetscape and River Walk Park.

The City of West Sacramento has not adopted citywide standards regarding the specific visual appearance of development. Instead, proposed project designs are subject to review and approval by the City, which includes review by the Office of the Design Review Administrator and/or City Council to ensure that projects do not conflict with the vision for the City.

As described previously in the “Local Plans, Policies, Regulations, and Ordinances” section, the General Plan, City of West Sacramento Zoning Ordinance, the PD-30 Text, and the *Washington Specific Plan* all identify policies and guidelines that would assist in ensuring that the proposed project is designed and constructed in a manner that results in a positive visual character for structures, landscaping, and open space areas. In addition, Urban Design Guidelines are included in the *Washington Specific Plan* that act as a guide for new development and construction in the project area. The intent of the design guidelines is to produce a quality and style of development that:

- reflects the heritage of the Washington Plan Area;
- enhances the pedestrian environment and encourages walking and biking;
- provides a sense of security and safety;
- takes maximum advantage of the Sacramento riverfront for use by residents of the area, workers, and visitors;
- provides reasonable development transition between the scale and grain of the Riverfront Mixed Use and adjacent lower density properties; and
- enhances the character and attractiveness of the streets in the area, creates distinct themes and functions for streets where possible, and enhance view corridors.

The PD-30 text restricts building heights to 18 stories or 270 feet. The proposed project would be consistent with that restriction, with the exception of the building on the east side of the River 3 area, which is proposed to be 19 stories and could potentially reach 300 feet tall. The policy would be amended to include the increased height standard for this building. As described in Chapter 2, four buildings ranging in height from 145 to 245 feet tall also are proposed for the project.

All project elements would be required to pass the design review process as described above in the "Local Plans, Policies, Regulations, and Ordinances" section. For projects to be approved via this process, the design review administrator must determine that they are consistent with all applicable design guidelines, many of which have been described here in discussions of the *Washington Specific Plan* and the PD-30 text. The public has the opportunity to provide comments during the design review process and may appeal decisions of the design review administrator to the city council.

Implementation of the project as described and compliance with City policies and guidelines are intended to ensure that the proposed project would have a pleasing appearance and would be substantially consistent with existing development and the direction of future development in the city and, for these reasons, would not result in significant negative aesthetic effects. However, although the proposed project would include many positive aesthetic features, construction of these facilities would result in a substantial alteration to the visual character of the project site. The project site would be modified from undeveloped areas to developed urban uses, and the existing local skyline, which is dominated by the Ziggurat, would contain multiple structures that would be clearly visible from all the vantage points listed above. Foreground views from residences adjacent to the project site also would be substantially altered as existing views of vacant land are replaced by high-density residential, commercial, and office development.

Perception of a visual impact is personal and subjective: What one person may perceive as a negative impact, another may find visually pleasing. Even those experienced in urban design principles and architecture can have differing opinions on the visual "quality" of a particular project. Although implementation of the Raley's Landing project would result in a substantial alteration to the visual character of the project site, many people may consider the project a positive addition to the West Sacramento riverfront that assists in the creation of a high-quality urban character and that complements existing development in both West Sacramento and Sacramento. However, in the matter of visual resources, reasonable people may differ, and a substantial number of individuals viewing the proposed project may consider the conversion of vacant land and vegetation at the project site a substantial degradation of the visual character of the project site, regardless of the appearance of the buildings.

Because reasonable people may differ as to the aesthetic value of the project site and whether development of additional urban uses in the area would constitute a substantial degradation of the existing visual character or quality of the site and its surroundings, a conservative approach was taken for this analysis, and the alteration of views and the character of the project site as seen from nearby residences, I-5, U.S. 50, the Tower Bridge, and Old Sacramento is considered a **significant** impact.

Mitigation Measure 3.12-3: Implement Measures to Reduce Impacts on Visual Quality

The General Plan, West Sacramento Zoning Ordinance, PD-30 text, and *Washington Specific Plan* identify various policies and guidelines that would reduce impacts on visual quality associated with project implementation. Compliance with these policies and guidelines would be ensured, in part, through compliance with the design review process. These guidelines are basic principles that would reduce visual resource impacts; however, the following mitigation measures are more specific and would further reduce the project's impacts on the visual quality and character of the project site:

- Where feasible and consistent with project objectives, retain trees currently on the project site and incorporate them into the project design and landscaping plan. Also see Mitigation Measure 3.11-5, related to preservation of trees and compensation for necessary tree removal.

- Design major streets with a consistent landscape theme, and site appropriate shade trees to form a canopy across roadways.

- Plant strips between curb and separated sidewalks along the city's roadways. Make strips wide enough to accommodate shade trees.

- During the City's design review process, ensure development associated with the Raley's Landing project is compatible with existing and planned future neighboring projects (where details are known), particularly where those projects are keeping with the City's vision. Determinations of compatibility should be based on massing and scale of structures, building siting and orientation, architectural character, landscaping language, and other features that help to define the site.

- Use strong form, massing, and authentic detailing to express styles, rather than "paste-on" details and superficial exterior detailing.

- Create compatibility and consistency for all exterior light fixtures that are affixed to the structures. The light fixtures shall be compatible with the architectural style of the structure.

- Use building colors that are mainly subtle, neutral, or muted earth tones. Where accent colors are used, ensure they do not dominate the visual character of the building exterior and cover only limited features on building surfaces, such as trim or moulding. The use of highly reflective or glossy materials shall be limited and is not appropriate in most contexts.

- Design screening devices, site walls, enclosed services, loading, and refuse areas to be an integral part of the building architecture.

Although Impact 3.12-3 would be reduced with implementation of this mitigation measure, as stated previously, reasonable people may differ as to the aesthetic value of the project site and whether development of additional urban uses in the project area would constitute a substantial degradation of the existing visual character or quality of the site and its surroundings. Therefore, a conservative approach is taken here, and this mitigation measure is not considered sufficient to reduce impact 3.12-3 to a less-than-significant level. Impact 3.12-3 is considered **significant and unavoidable.**

IMPACT 3.12-4	Visual Resources — Impacts from Lighting. *The proposed project would involve the lighting of new development and the introduction of reflective surfaces that would inadvertently create light and glare that could affect motorists on nearby roadways and residents on adjacent properties. In addition, the degree of darkness in West Sacramento and on the proposed project site would diminish as a result of development, effectively obscuring views of stars, constellations, and other features of the night sky. Implementation of lighting guidelines identified in the General Plan, West Sacramento Zoning Ordinance, PD-30 text, and*

*Washington Specific Plan would substantially reduce the potential level of light generated by the proposed project, thereby minimizing the potential for these effects. However, there remains the potential for the proposed project to generate substantial light and glare that would adversely affect daytime and nighttime views in the area. This impact is considered **significant**.*

Under current conditions, the only notable source of light and glare on the Raley's Landing project site is the portable lighting used on the Washington Street property for parking during a nighttime event at Raley Field. In the project vicinity, the Ziggurat acts as a major source of light, localized glare, and light trespass into the night sky when exterior building lights are illuminated. Nearby residences are also sources of light and glare, although at a much smaller scale than the Ziggurat.

Development of the proposed project would require lighting of residential, office, and commercial/retail uses, which could alter nighttime views in the area. In addition, a substantial increase in the amount of nighttime light and glare from the proposed project could potentially obscure views of stars, constellations, and other features of the night sky. Many of the structures associated with the proposed project would have substantial amounts of glass surface on their façade, resulting in the potential to generate daytime glare that could adversely affect the area. Light and glare generated by the project also could shine onto motorists on nearby roadways, including SR 275.

As described previously in the "Local Plans, Policies, Regulations, and Ordinances" section, various guidelines are included in the General Plan, West Sacramento Zoning Ordinance, PD-30 text, and *Washington Specific Plan* that are directly related to lighting or that would influence the potential for a project to generate light and glare (i.e., guidelines on building materials, trees, and landscaping). Implementation of these guidelines would minimize the potential for the proposed project to generate substantial light and glare. However, as is appropriate for the level of guidance and regulation provided by these documents, they cannot address all circumstances where substantial light and glare could be generated. Similarly, at the current stage of project planning for the Raley's Landing project, all building materials that might generate glare and specific sources of light generation associated with the project cannot be known at this time. Therefore, the potential remains for the proposed project to generate substantial light and glare that would adversely affect daytime and nighttime views in the area. This impact is considered **significant**.

Mitigation Measure 3.12-4: Implement Measures to Reduce Light and Glare

The General Plan, West Sacramento Zoning Ordinance, PD-30 text, and *Washington Specific Plan* identify various policies and guidelines that would reduce impacts related to light and glare. The mitigation actions listed below build on these guidelines and would further reduce the potential for the proposed project to generate substantial light and glare that could adversely affect daytime and nighttime views:

- Exterior building materials shall be composed of a minimum of 50% low-reflectance, nonpolished finishes.
- Highly reflective mirrored glass walls shall not be used as the primary building material for façades. Where glass surfaces larger than standard windows appropriate for the land use are installed, glass with low-emittance (Low-E) coating shall be used to reduce the reflective qualities of the building, while maintaining energy efficiency.
- Bare metallic surfaces, such as those of pipes, flashing, vents, and light standards, shall not be polished but shall be painted or otherwise colored and have a brushed, matte, or similar finish to minimize reflectance.
- The use of harsh mercury vapor or low-pressure sodium bulbs is prohibited.
- Outdoor light fixtures shall have light sources that are aimed downward to minimize the potential for lighting to affect views of the night sky.

With implementation of this mitigation measure, in conjunction with existing city policies and guidelines relevant to generation of light and glare, the proposed project would not include building surfaces or lighting elements that would act as substantial sources of light and glare; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.12-5	Visual Resources — Shadow Effects. *Because of the height of the proposed buildings, implementation of the project could create additional shadowing on residential or public spaces. In most instances, shadows generated by the proposed project would not fall on any particular area for a substantial portion of the day. In addition, many of the areas that would be affected by project-generated shadows are currently shaded by large canopy trees. However, shadow simulations indicate that during portions of the year, shadows cast by structures associated with the Washington Street property would shade homes to the north of the property during a substantial portion of the day. Therefore, this impact is considered **significant**.*

Although the City has no adopted standard regarding shadow, other jurisdictions consider shadow a significant impact when shadows could negatively affect public open spaces. For this analysis, the creation of shadows is considered a significant adverse effect if the proposed project would create additional shadowing on residential or public spaces during a substantial portion of the day. Extensive shading can adversely affect the use and appreciation of parks and other public outdoor areas, as well as private yards associated with residences. The introduction of new extensive shading also can adversely affect public and private landscaping. Existing public open spaces in the vicinity of the proposed project are associated with the River Walk Park. Residences potentially shaded by the proposed project are those located just north of the western portion of the Washington Street Property, those across G Street from the eastern portion of the Washington Street Property, and homes located across F Street and Third Street, opposite the River 3 area.

Currently, the only potential for substantive shadows to be generated at the project site results from the Ziggurat and associated parking structure and large-canopy trees at various locations in the area. The Ziggurat is 11 stories and 158 feet tall, but because of its pyramidlike design (i.e., smaller floor plate on upper floors), it casts a comparatively small shadow relative to more traditional buildings of the same height. The parking structure is of sufficient height and design to cast shadows across F Street and Third Street onto adjacent properties. Multiple large-canopy trees currently shade the residences located north of the Washington Street property. Many of the homes across the street from the River 3 Area also have nearby shade trees but not to the same extent as the homes near the Washington Street property.

Because the sun is in the southern sky in the northern hemisphere, shadows are cast generally north; therefore, the proposed project would cast shadows over nearby residences and local roadways, predominately those north of the Washington Street property and north of the River 3 area. However, as the sun rises in the east, development in the River 3 Area has the potential to shade homes to the west, across Third Street. As the sun sets in the west, the buildings in the River 1, 2, and 3 areas have the potential to shade portions of River Walk Park.

All project facilities are located west of River Walk Park. Therefore, shadows generated by the proposed project would contact the park only in the afternoon hours. There is not a condition where project structures surround park facilities and would shade a particular area for an extended period. As the sun moves across the southern sky in the afternoon and sets in the evening, project-generated shadows would move across the park. The result would be that no particular area would be shaded for more than a fraction of the afternoon hours. Therefore, implementing the proposed project would not result in shading of River Walk Park for a substantial portion of the day.

Homes west of the River 3 area have the potential to be shaded by project development for a portion of the morning as the sun rises in the east. Similar to the discussion of River Walk Park above, there is not a condition where project structures surround the homes and would shade a particular area for an extended period. In addition, River 3 development immediately across the street from these homes would not consist of the high-rise towers but would consist of the proposed commercial development and the parking structure. As described in Chapter 2, the facade along Third Street would be two stories tall. Above that level, the facade steps back 20 feet before rising to its full height. The lower elevations of this development would reduce the length of the shadow potentially cast onto nearby residences. The separation between project development and the homes provided by Third Street would further minimize the amount of time the project might cast shadows on these residences. Therefore, the proposed project would not result in shading of the residences along Third Street for a substantial portion of the day.

Homes located north of the River 3 area and the Washington Street property have the potential to be shaded by project development for a longer portion of the day because as the sun moves across the southern sky, most of the shadow created by an object falls at some angle toward the north. However, during midday, the sun is higher (i.e., closer to being directly overhead) than during the morning and afternoon. Therefore, the length of shadows cast toward the north is shorter than shadows cast toward the east or west. Development immediately adjacent to the homes north of the Washington Street property and the River 3 area would not be high-rise towers but low-rise structures and, in the case of the River 3 area, the proposed parking structure. The Washington Street property development would be six stories tall, separated from residences north of the development by a 20-foot setback that would be used for emergency vehicle access. The lower elevations of this development would reduce the length of the shadow potentially cast onto nearby residences. In the case of residences located across E Street opposite the River 3 area, the separation between project development and the homes provided by this street would further minimize the amount of time the project might cast shadows on these residences. Although the tower components of the River 3 development would cast shadows that would reach homes to the north, the western tower would cast shadow toward these residences only during a portion of the midday period, and the eastern tower would cast a shadow towards these homes only during a part of the midmorning. Implementing the proposed project would not result in shading of residences along E Street for a substantial portion of the day.

The residences with the greatest potential to be shaded by the proposed project are those just north of the Washington Street property because of their proximity to the project boundary. Exhibit 3.12-10 shows shadow simulations conducted for the Washington Street property. The simulations show shadows that would be cast by Washington Street property structures at 9:00 a.m., noon, and 3:00 p.m. during four dates over the year: June 21, the summer solstice, when shadows are shortest; September 23, the autumnal equinox, when shadows are at a median length; December 21, the winter solstice, when shadows are the longest; and March 21, the vernal equinox, when shadows are again at a median length. The simulations indicate that during the periods of the year when shadows are longer (on and near December 21), shadows cast by structures associated with the Washington Street property would shade homes directly north of the western portion of the property during the morning, midday, and afternoon hours. Homes on the corner of G Street and Third Street to the north of the eastern portion of the Washington Street property would be shaded during the midday and afternoon hours. Although many of these homes and associated front and back yards receive substantial shade from nearby large-canopy shade trees, development of the Washington Street property would create additional shadowing, relative to existing conditions, for a substantial portion of the day.

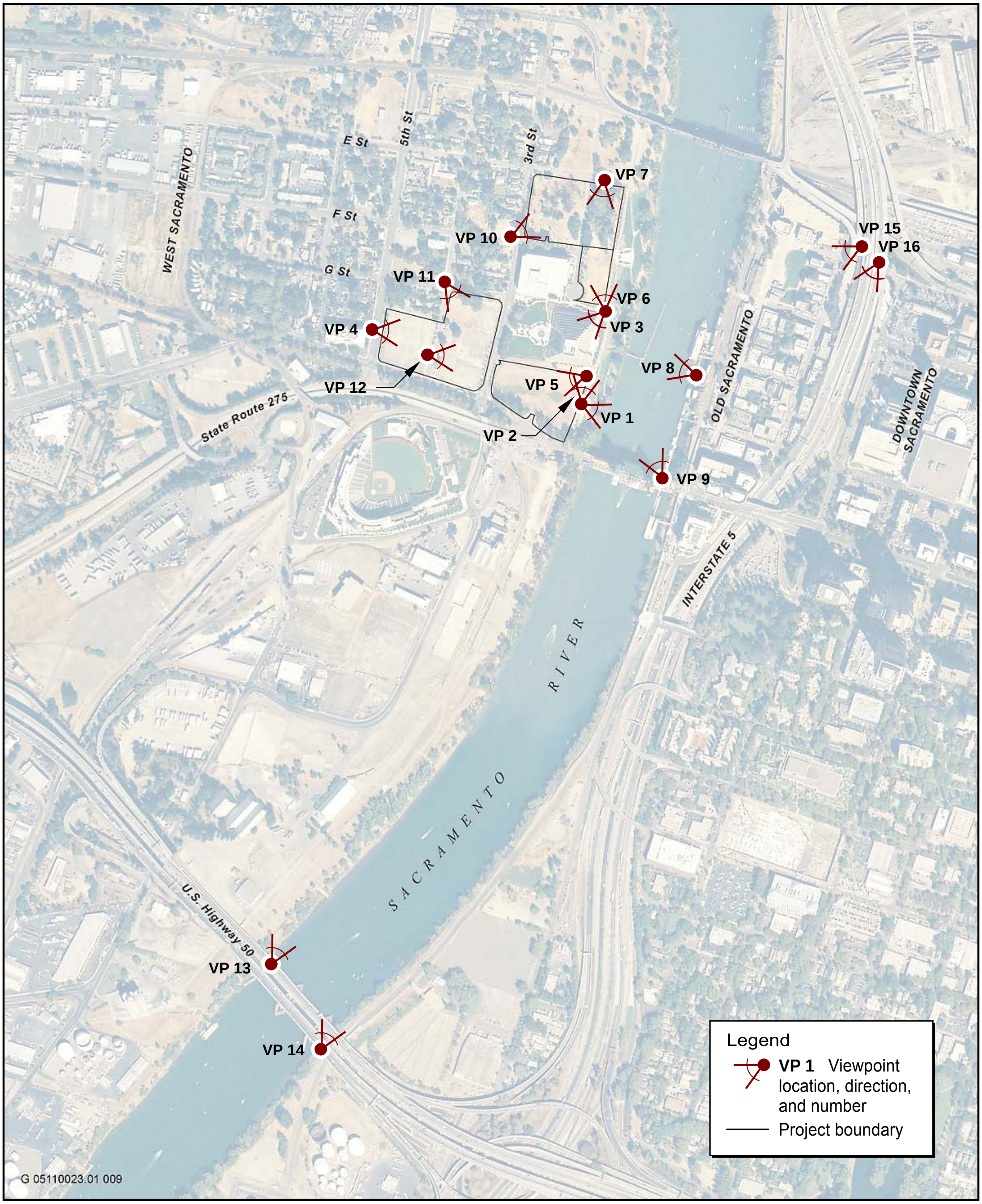
Because the structures associated with the Washington Street property would create additional shadowing at residences immediately to the north during a substantial portion of the day, this impact is considered **significant**.

Mitigation Measure 3.12-5: Implement Measures to Reduce Shadows Cast by the Washington Street Property

Preventing shadows cast by structures associated with the Washington Street property from shading residences immediately to the north for a substantial portion of the day would require significant alterations of the project design. Because of the proximity of the homes, both the height of the structures along the northern edge of the Washington Street property would need to be reduced and these structures would need to be moved to the south to reduce the impact to less-than-significant levels. Given the limited size of the project parcels, such a design modification could significantly reduce the number of housing units and availability of retail space on the property. Based on conversations with the project applicant, such reductions in project density would result in development costs exceeding revenue generation potential, resulting in the project becoming economically infeasible (Nybo, pers. comm., 2005).

Another approach to minimizing shadow effects would be to consolidate the structures proposed in the northern portion of each half the site (east and west of Fourth Street) into a single tall tower. Although taller towers would cast longer shadows, thereby potentially affecting additional homes to the north, a single shadow would be produced by each tower that would move from west to east as the sun moved across the sky, resulting in no particular area being shaded by project structures for a substantial portion of the day. However, construction of such towers would be substantially more costly than the proposed project configuration. As building height increases, the cost of constructing each floor also increases. Under this scenario, development costs would again exceed revenue generation potential, resulting in the project becoming economically infeasible (Nybo, pers. comm., 2005).

No feasible mitigation is available to prevent proposed structures associated with the Washington Street property from casting shadows on homes immediately to the north during a substantial portion of the day. Therefore, Impact 3.12-5 is considered **significant and unavoidable**.



Source: EDAW 2005

Photograph Viewpoint Locations **Exhibit 3.12-1**

Viewpoint 1 – View from River 1 area of Old Sacramento

Viewpoint 2 – River Walk Park includes a pedestrian and bicycle linkage located along the project's eastern boundary

Representative Photographs **Exhibit 3.12-2**

Viewpoint 3 – The Ziggurat is located between the River 1 and River 2 areas

Viewpoint 4 – Gravel parking lot on the Washington Street property

Representative Photographs **Exhibit 3.12-3**

Viewpoint 5 – River 1 area

Viewpoint 6 – River 2 area

Representative Photographs **Exhibit 3.12-4**

Viewpoint 7 – River 3 area

Viewpoint 8 – The project site is visible from Old Sacramento

Representative Photographs **Exhibit 3.12-5**

Viewpoint 9 – View of the project site from the Tower Bridge

Viewpoint 10 – River 3 area from nearby residences

Representative Photographs **Exhibit 3.12-6**

Viewpoint 11 – Washington Street property from nearby residences

Viewpoint 12 – Washington Street property

Representative Photographs **Exhibit 3.12-7**


Viewpoint 13 – View of the project site from westbound U.S. Highway 50

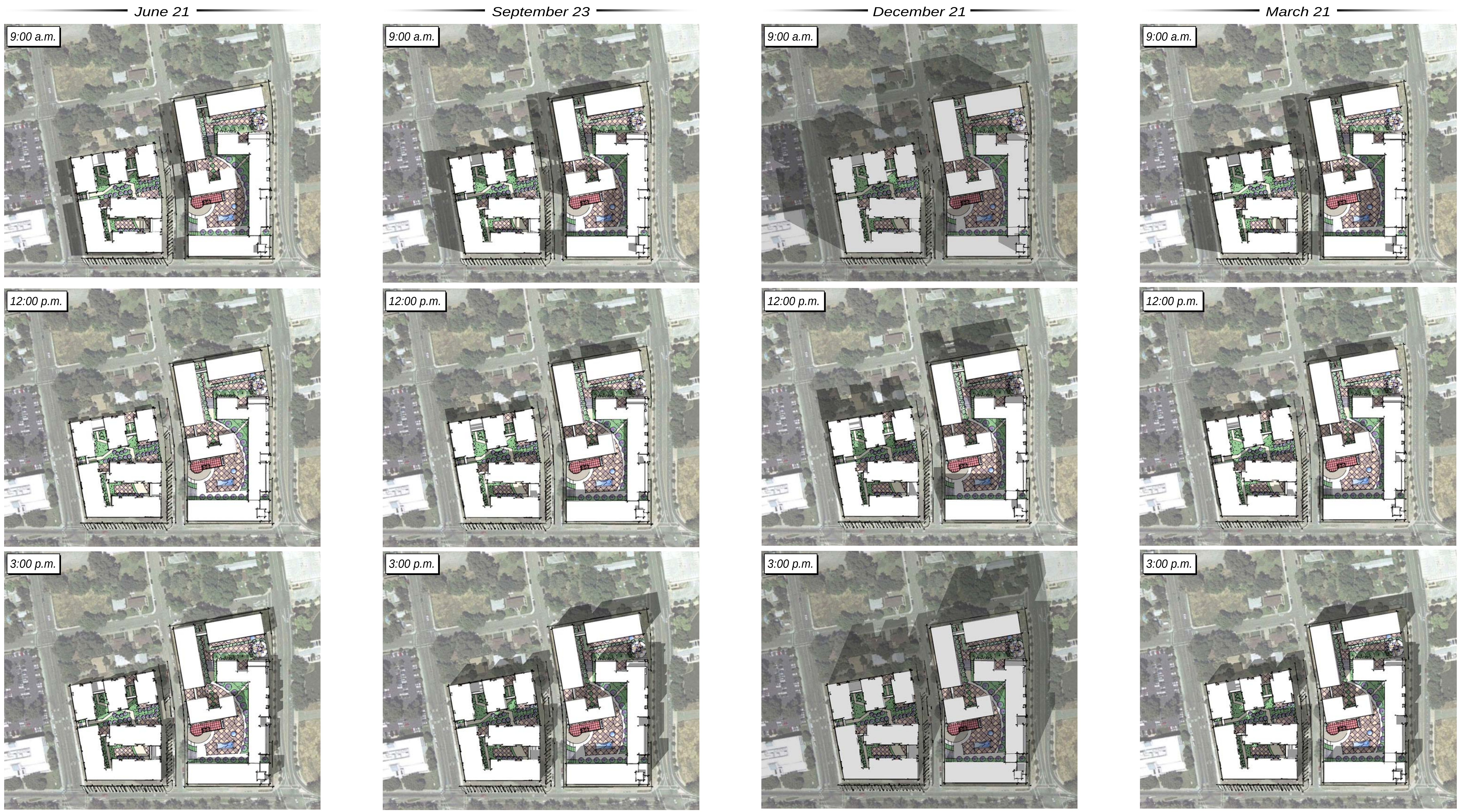

Viewpoint 14 – View of the project site from eastbound U.S. Highway 50

Representative Photographs **Exhibit 3.12-8**

Viewpoint 15 – View of the project site from southbound Interstate 5

Viewpoint 16 – View of the project site from northbound Interstate 5

Representative Photographs **Exhibit 3.12-9**



Source: McLarand Vasquez Partners Int'l Inc. 2005 G 05110023.01 014

Shadow Simulations for the Washington Street Property **Exhibit 3.12-10**

3.13 CULTURAL RESOURCES

This section identifies cultural resources on the proposed project site and includes an evaluation of the potential impacts on cultural resources that could result from construction of the proposed project. Given the confidentiality requirements of the state and the California Historical Resources Information System (CHRIS), references in this DEIR to the locations of cultural resources sites are provided in general terms. The archaeological report prepared for the project, which identifies specific locations of the cultural resources sites in the project area, is on file for review by authorized individuals at the Northwest Information Center of the CHRIS and at the City of West Sacramento Community Development Department, 1110 West Capitol Avenue, West Sacramento, California 95691 (916/617-4645).

3.13.1 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Because there is no involvement in the proposed project by federal agencies, no federal plans, policies, regulations, or laws related to cultural resources are applicable to the proposed project. However, federal regulations, such as Section 106 of the National Historic Preservation Act of 1966 (NHPA), are relevant in that they provided the foundation and impetus for the cultural resources provisions of CEQA.

Section 106 of the NHPA requires that federal agencies take into account the effects of their actions on properties that may be eligible for listing or are listed in the National Register of Historic Places (NRHP) and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. To determine whether an undertaking could affect NRHP-eligible properties, all cultural sites that could be affected must be inventoried and evaluated for inclusion in the NRHP.

The significance of an archaeological or historic resource under NHPA guidelines is an important consideration in terms of their management. Listing or eligibility for listing in the NRHP is the primary consideration in determining whether a resource is subject to further research and documentation.

The determination of the NRHP eligibility of cultural resources is guided by the specific legal context of the site's significance as set out in Section 106 of the NHPA (16 U.S. Code 470), as amended. The NHPA authorizes the Secretary of the Interior to expand and maintain a National Register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture. A property may be listed in the NRHP if it meets the criteria for evaluation defined in 36 Code of Federal Regulations 60.4:

- The quality of significance in American history, architecture, archaeology, engineering and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and:

    a. That are associated with events that have made a significant contribution to the broad patterns of our history; or

    b. That are associated with the lives of persons significant in our past; or

    c. That embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess an artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

    d. That have yielded, or may be likely to yield, information important in prehistory or history.

State Plans, Policies, Regulations, and Laws

State CEQA Guidelines

CEQA offers guidance regarding impacts on historic and prehistoric cultural resources. CEQA states that if implementation of a project would result in significant impacts on important cultural resources, then alternative plans or mitigation measures must be considered. However, only significant cultural resources need to be addressed. The State CEQA Guidelines define a significant historical resource as "a resource listed or eligible for listing on the California Register of Historical Resources" (CRHR) (Public Resources Code Section 5024.1). A historical resource may be eligible for inclusion on the CRHR if it:

a. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

b. is associated with the lives of persons important in our past;

c. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

d. has yielded, or may be likely to yield, information important in prehistory or history.

In addition, the State CEQA Guidelines require consideration of unique archaeological sites (Section 15064.5). If an archaeological site does not meet the criteria for inclusion on the CRHR but does meet the definition of a unique archeological resource as outlined in the guidelines (Section 21083.2), it may be treated as a significant historical resource. As a matter of policy, public agencies should avoid causing impacts on historic and archaeological resources, particularly those that are eligible for listing on the CRHR. When impacts cannot be avoided, they can be mitigated through avoidance during construction phases, incorporation of sites into open space, capping of resources with chemically stable fill, deeding of sites into a permanent conservation easement, or data recovery (testing and excavation).

Section 15064.5(e) of the State CEQA Guidelines 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 Native American Heritage Commission must be contacted within 24 hours. At that time, Section 15064.5(d) of the State CEQA Guidelines directs the lead agency to consult with the appropriate Native Americans as identified by the Native American Heritage Commission and directs the lead agency (or applicant) to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Local Plans, Policies, Regulations, and Ordinances

City of West Sacramento General Plan

The following goals and policies from Section V of the General Plan, "Recreational and Cultural Resources," pertain to cultural resources and are relevant to the proposed project:

- **Goal F:** To preserve and enhance West Sacramento's historical heritage.

  - **Policy 1:** The City shall set as a high priority the protection and enhancement of West Sacramento's historically and architecturally significant buildings.

  - **Policy 4:** The City shall work with property owners in seeking registration of historical structures and sites as State Historic Landmarks or listing on the National Register of Historic Sites.

- **Policy 7:** New development near designated historic landmark structures and sites shall be designed to be compatible with the character of the designated historic resource.

► **Goal G:** To protect West Sacramento's Native American heritage.

- **Policy 1:** The City shall refer development proposals that may adversely affect archaeological sites to the California Archaeological Inventory, Northwest Information Center, at Sonoma State University.

- **Policy 2:** The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting the California Archaeological Inventory, Northwest Information Center, conducting 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 the State CEQA Guidelines.

- **Policy 3:** Archaeological sites shall be protected by means of requirements in development permits requiring on-site monitoring by qualified personnel of excavation work in areas identified as archaeologically-sensitive. Development work shall be required to cease in any place where artifacts or skeletal remains have been discovered until these have been examined and evaluated by a qualified archaeologist and arrangements have been made to avoid or otherwise protect valuable resources.

Washington Specific Plan

The following goals and policies from the *Washington Specific Plan* pertain to cultural resources and are relevant to the proposed project:

► **Goal 4.E:** To preserve and enhance the historical heritage of the Washington Plan Area.

- **Policy 4.E.1:** The City shall set as a high priority the protection and enhancement of the Washington Plan Area's historically and architecturally significant buildings.

- **Policy 4.E.2:** The City shall establish an historic district in the Old Broderick area and develop standards and a program for preservation and rehabilitation of historic structures and compatible infill development.

- **Policy 4.E.3:** The City and Redevelopment Agency shall support the efforts of property owners to preserve and renovate historically and architecturally significant structures.

- **Policy 4.E.4:** The City shall support relocation of structures of historical, cultural, or architectural merit which are proposed for demolition. The City shall encourage relocation within the Washington Plan Area.

- **Policy 4.E.5:** The City shall encourage the developers of new projects near designated historic landmark structures and sites to deign their projects to be compatible with the character of the designated historic resource.

- **Policy 4.E.6:** The City shall explore the possibility of establishing a city cultural center in the Washington Plan Area that might include a historical museum and an art gallery.

- **Policy 4.E.7:** The City shall ensure that street lighting systems and street furniture in the historic sections of the Washington Plan Area reflect he historic character of the area.

- **Goal 4.F:** To protect the Native American heritage of the Washington Plan Area.

  - **Policy 4.F.1:** The City shall seek to protect archaeological sites by referring development proposals in areas with known cultural resources to the California Archaeological Inventory, Northwest Information Center, at Sonoma State University.

  - **Policy 4.F.2:** The City shall require mitigation of potential cultural resource impacts in accordance with accepted local and state practices where development may adversely affect known resources.

3.13.2 EXISTING CONDITIONS

The project site is situated in the southern Sacramento Valley, directly west of the Sacramento River (Exhibit 2-1). The area has been characterized historically by alluvium deposited during seasonal flooding of the Sacramento River and has an elevation of approximately 30 feet above mean sea level (amsl). Historically, the area was developed as the town of Washington and had several single-family residences. Commercial development began with the establishment of the salmon canning and ship-building industries in the 1860s; ship building in the area continued well into the 1940s. Currently, three of the four areas that compose the Raley's Landing project site are undeveloped vacant lots; the Washington Street property is used for event parking for Raley Field.

PREHISTORY

Archaeological data gathered over the past century has shown that humans have inhabited the state for at least the past 10,000–12,000 years. Attributable in part to the varied topography and climate of the state, technological adaptations to these disparate conditions vary greatly from region to region and over long periods. To a certain degree, however, Native American technological and subsistence systems and land use patterns appear to have possessed similar general elements during various periods of prehistory. Although evolving environmental conditions can account for many technological changes over time, the effects of the intergroup exchange of material and nonmaterial cultural elements were almost certainly an important factor affecting cultural development and variability throughout California. The basic aspects of these broad temporal and cultural periods are outlined below.

The *Paleo-Indian Period* (10,000 B.C. to 6000 B.C.) saw the first clearly demonstrated entry and spread of humans into California. Known sites are situated along shores of pluvial lakes and typically exhibit implements likely used in hunting. Traditionally, Paleo-Indian subsistence and land use have been tied to the hunting of Pleistocene megafauna. However, there is little archaeological evidence supporting the notion that Paleo-Indian lifeways were consistently tied to the pursuit of species such as mammoth, mastodon, or bison. A developed milling tool technology may also exist during this period and has been noted at some sites. The social units are thought to have been small, highly mobile, and not heavily dependent on the exchange of resources, with exchange activities occurring on an ad hoc, individual basis. Artifacts characteristic of this period include distinctive fluted projectile points (which likely served as all-purpose tools as well) and flaked crescent-shaped implements. These and other stone tools are frequently produced of lithic materials exotic to the areas in which they are found archaeologically, indicating that their makers may have traveled great distances.

The beginning of the *Lower Archaic Period* (6000 B.C. to 3000 B.C.) coincides with a middle Holocene climatic change. Generally drier conditions prevailed, and this brought about a reduction in the size and number of pluvial lakes that appear to have been so important in earlier land use patterns. Subsistence appears to be focused on the consumption of plant foods over faunal resources, and settlement appears to have been semisedentary. Such changes in settlement and subsistence patterns may be related, at least in part, to the ongoing climatic changes during this time. Most stone tools were manufactured of local materials, and patterns of material exchange remained on an ad hoc basis. Distinctive artifact types include large projectile points of varying morphology and milling slabs and grinding stones, which are frequently encountered on sites.

The *Middle Archaic Period* (3000 B.C. to 1000 B.C.) begins at the end of the mid-Holocene; climatic conditions became similar to those of the present day. The material cultural changes noted in the archaeological record likely occurred at least in part as a response to shifting environmental factors. The economic base became more diversified, and acorn-processing technology first appeared. Hunting remained an important source of food although there was clearly a shift in emphasis toward floral resources. Sedentism appears to have been more fully developed, and there was a general population growth and expansion onto more varied parts of the landscape. Little evidence is present for development of regularized exchange relations. Characteristic artifacts for this period include the bowl mortar and pestle, which first appears in the archaeological record during this time, and the continued use of large projectile points.

The growth of sociopolitical complexity marks the *Upper Archaic Period* (1000 B.C. to 500 A.D.) and the development of status distinctions based on material wealth is well documented. Group-oriented religions emerged and may represent the origins of the Kuksu religious system at the end of the period. There is greater complexity of exchange systems, with evidence of regular, sustained exchanges between groups. Shell beads gained in significance as possible indicators of personal status and as important trade items. This period retains the large projectile points found in earlier periods but in different styles. In addition, the bowl mortar and pestle replaced the milling stone and hand-stone in most regions in California.

Several technological and social changes distinguish the *Emergent Period* (500 A.D. to 1800 A.D.). The bow and arrow were introduced, ultimately replacing the dart and atlatl, which were employed at least as early as the Lower Archaic Period. Territorial boundaries between groups became well established, and settlement patterns were highly sedentary. It became increasingly common that distinctions in an individual's social status could be linked to acquired wealth. Exchange of goods between groups became more regularized with more resources, including raw materials, entering into the exchange networks. During the latter portion of this period (1500 A.D. to 1800 A.D.), exchange relations became highly regularized and sophisticated. The clamshell disk bead developed into a monetary unit for exchange, and increasing quantities of goods were transported greater distances. Specialists in groups retained an ability to govern various aspects of the production and exchange of these shell beads. It was during the latter years of this period that large-scale European settlement began to greatly affect traditional native lifeways.

ETHNOGRAPHIC SETTING

Ethnographically, the project area is located at the boundary between the Patwin to the west and the Nisenan to the east. This section provides an ethnographic overview of both groups.

Patwin

The Patwin are a series of linguistically and culturally related groups that occupied a portion of the lower Sacramento Valley west of the Sacramento River and north of Suisun Bay. Major sources of information on these groups include the works of Bennyhoff (1977), Johnson (1978), Kroeber (1925), McKern (1922, 1923), Powers (1877), and Work (1945). Although these groups had no common name, they spoke dialects of a single historically related language. Use of the Patwin language extended southward to the Sacramento-San Joaquin River Delta. There were apparently numerous dialects, some of which were ethnographically recorded, including the Hill, River, Cache Creek, Lake, Tebti, Dahcini, and Suisun (Shipley 1978).

The Patwin were politically organized into tribelets that consisted of one primary and several satellite villages. Each tribelet maintained its own autonomy and sense of territoriality. Villages were located along rivers and major creeks, often near the juncture with other waterways or in the vicinity of foothill settings. Structures in these villages were usually earth covered, semisubterranean elliptical (River Patwin) or circular (Hill Patwin) in form (Kroeber 1932). All except the individual family dwellings were built with the assistance of everyone in the village. Ethnographic accounts indicate that one's paternal relatives built single-family homes in the settlements (Johnson 1978).

Through the skilled use of the natural materials available in their range, the Patwin exploited a wide variety of edible resources. Netting and cordage was of particular importance in fishing and hunting activities, and wild hemp (*Apocynum cannabinum*) and milkweed (*Asclepias* sp.) provided particularly suitable fibers for the production of fishing nets and lines. Anadromous fish such as sturgeon and salmon were part of the staple Patwin diet (Johnson 1978) and were typically caught in large numbers using stone and wood weirs and cordage nets.

In general, the Patwin territory was well watered, which supported a wide variety of animal life available for hunters, including tule elk, deer, antelope, bear, various species of duck, geese, turtles, and other small animals. Although hunting and fishing were clearly important subsistence activities among the Patwin, as with many Native American groups throughout the region, their primary staple food was the acorn. Two species of valley oak acorns were used: hill and mountain oak. The oak groves themselves were considered as "owned" communally by the particular tribelet. Other commonly exploited floral food resources included buckeye, pine nuts, juniper, manzanita, blackberries, wild grape, and tule roots in the valley. Various seeds such as sunflower, alfilaria, clover, bunchgrass and wild oat, were also gathered and ground into coarse flours. As with the oak groves, particularly fruitful tracts of seed-bearing lands were controlled by individual families or the tribelets themselves (Powers 1877, Kroeber 1932).

One of the more distinctive aspects of the Patwin culture was the Kuksu or "big-head" dances cult system, also found in other tribes through much of north central California. Within each cult were secret societies, each with its own series of dances and mythologies centered on animal figures, such as *Sede-Tsiak* (Old Man Coyote) or *Ketit* (Peregrine Falcon). In the central California cult system, many groups possessed the Kuksu, but the Patwin also had the "ghost dance" (way saltu) and Hesi societies (Kroeber 1932). Each secret society engaged in specific spiritual activities. For example, the *Saltu* society stressed curing and shamanistic functions (Johnson 1978).

Nisenan

According to Kroeber (1932) the west side of the Sacramento River is within or near the southern limits of the Nisenan, and several ethnographic Nisenan villages have been indicated along the western bank of the river (see Heizer and Hester [1970] and Johnson and Johnson [1974]). Although Beals (1933) indicated four subgroups for the Nisenan, Wilson and Towne (1978) defined three main subgroups: Northern Hill Nisenan, Southern Hill Nisenan, and Valley Nisenan. It was the Valley Nisenan that would have occupied lands in and around the Raley's Landing project area before European contact.

Valley Nisenan located their permanent settlements along the riverbanks on elevated natural levees near an adequate food and water supply, in fairly open terrain, with southern exposure preferred (Johnson and Johnson 1974, Beals 1933). Perhaps three types of structures were erected. One was the dwelling, or *hu*, which consisted of a pole-framework dome-shaped structure approximately 10–15 feet across, built within a slightly excavated depression (Beals 1933, Kroeber 1925). A dance house, or *k'um*, measured approximately 30 feet across, and Kroeber (1922) indicates that sweathouses were also erected, but Beals (1933) believes that this type of structure stopped being built early on in the ethnographic period.

Villages consisted of tribelets of small extended families consisting of 15–25 individuals to larger communities with more than 100 people (Kroeber 1925). Usually one large village played an important role in the social-political organization of a particular area. One of these larger villages was that of *Pusuna*, located at the confluence of the American and Sacramento Rivers, with its sphere of influence extending north and south and east for a few miles. Although the hereditary position of a headman was appointed for each village (Beals 1933, Faye 1923), very little authority was directly attributed to this individual without the support of the villagers and the shamans (Beals 1933, Wilson and Towne 1978).

European Contact

In general, Nisenan and Patwin lifeways remained unchanged for centuries, until the large-scale arrival of European populations during the early decades of the 19th century. Although various Spanish missionaries and explorers and Russian and American trappers and traders frequented the region during the late 1700s and early 1800s, they tended to have relatively little effect on the overall native cultures. However, with the coming of Euro-American settlement, in a fairly brief period, traditional Nisenan and Patwin lifestyles and belief systems were almost completely destroyed through disease and forced removal from their ethnographic territories. Although much of their culture was certainly lost during this period, present-day Nisenan and Patwin descendents constitute a revitalized and thriving community, taking their place within the broader economic and social patterns of the Sacramento area.

HISTORIC CONTEXT

Historic Overview

Early Settlement

Early settlement in eastern Yolo County began in December of 1844, when John Schwartz, an eccentric Dutch immigrant who had come to California with the Bidwell-Bartleson party, was granted three square leagues of land along the west side of the Sacramento River, known as Rancho Nueva Flandria. In 1846, Schwartz sold 600 acres of the property to James McDowell, who had arrived in California with his wife and daughter in 1845. McDowell built a cabin across from the City of Sacramento in the northeast corner of the ranch. In 1850, a year after his death, McDowell's wife laid out a town site that was at first named Washington. The first county seat for Yolo County was located just south of the confluence of the Feather and Sacramento Rivers. Following its decline, the judicial and political activity was transferred to Washington, which served as the county seat from 1851 to 1857 and briefly between 1861 and 1862. The county courthouse was located along the west bank of the Sacramento River, north of E Street and south of the I Street Bridge.

An 1870 lithograph indicates that during this period, at least the River 2 and 3 portions of the Raley's Landing project site consisted of orchards with isolated farmhouses. Further development of these areas occurred during the late 1800s. In 1889, Washington received a post office, and because a post office named Washington had already been established in Nevada County, the postmaster apparently arbitrarily selected the name "Boruck." The post office closed 6 months later, possibly because residents were indignant toward the name. In 1893, the Broderick post office opened; it was named after the late Senator David C. Broderick, a hot-tempered person who had the dubious distinction in 1859 of being the last person killed in a legal duel in California (Walters 1987). With the coming of the railroad, commerce transferred to the City of Sacramento, and the Broderick area rapidly declined in commercial importance. Broderick was incorporated into the town of West Sacramento in 1987 (Hulse 1990).

Salmon Canning Industry

The first salmon cannery of the Pacific Coast, Hapgood, Hume, and Company, began operations in 1864, opposite the base of K Street, in Yolo County. By 1882, the multimillion-dollar industry consisted of 20 canneries operating along the Sacramento River, with a total production of 200,000 cases per year. However, these were short-lived ventures that succumbed to the depletion of salmon associated with the heavy siltation of the Sacramento River caused by hydraulic mining in the foothill regions to the east.

River Transportation

The use of steam navigation to transport farm products, commercial goods, and passengers between various points along the Sacramento River began in 1847, when the steamboat *Little Sitka*, consigned to the merchant William

Leidesdorff, steamed upriver from Yerba Buena to New Helvetia. River traffic greatly increased with the discovery of gold and the possibility of high profits for merchants and would-be miners. By 1854, 203 vessels were operating on the rivers of the Delta, and competition was so fierce that ramming was a frequent device employed to eliminate competition (Delta Protection Commission 1994). To reduce sinkings and maintain profits, the major shipping concerns formed the California Steamship Navigation Company (McGowan 1961). The company dominated transportation between San Francisco and Sacramento before 1871, when the transcontinental railroad was completed to San Francisco. However, connections with the railroad ensured that the company remained the major river transportation firm below Sacramento.

Beginning in 1875, a second company, California Transportation Company, entered the river transportation business to assist fruit growers who needed a reliable and quick method of getting their produce to markets in San Francisco (McGowan 1961). First organized as the Sacramento Wood Company in 1869 to supply cord wood to Sacramento, the company took over the Washington shipyard in 1872 (Walters 1987). Later expanding operations to transport wheat, the venture changed its name to the Sacramento Transportation Company in 1879, and many more steamers and barges were added to the company fleet (Garvey 1995). By 1913, the company was operating seven steamers and 23 barges, primarily between Chico Landing, east of the city of Chico, and San Francisco Bay (McGowan 1961). The first ship built at the Washington shipyard was the *Varuna*, constructed in 1873 at a cost of $50,000; it could haul 800 tons. Later, the *San Joaquin #4* was completed; reportedly able to tow five barges, it was the most powerful inland vessel in the United States (Walters 1987).

Sanborn Fire Insurance Maps for 1895 indicate that a portion of the River 3 area—the property between the Sacramento River and Second Street, between E and F Streets—was the location of the Charles Crocker Estate Ship Yard. Although Crocker’s name is attached directly to the operation, it was actually owned by the Southern Pacific Railroad of which he was part owner (Walters, pers. comm., 2005). A series of Sanborn Fire Insurance Maps identify this area as the “Sacramento Transportation Company’s Ship Building Yard” in 1915, the “Sacramento Navigation Company’s Ship Building Yard” in 1950 and 1952, and “The River Lines, Inc. Ship Building Yard” In 1957 and 1960.

Competition from the railroad and unpredictable water flows above Sacramento limited continuous river transportation primarily to the area below Sacramento. However, river transportation remained a vital link between agricultural and commercial enterprises in the Sacramento Valley and markets in San Francisco and throughout the world. Following a brief recession in freight traffic in 1910, tonnage increased from 500,000 tons in 1910 to 1,000,000 tons in 1918 and continued at or near this figure until the Great Depression. This increase in freight led the Sacramento Transportation Company to launch the *Colusa* in 1911. Called the largest freighter on the river, it was over 200 feet long and drew 4 feet of water when loaded and 26 inches when empty. In 1925, Sacramento became the second most important river port in the United States in terms of the value of its cargo; it ranked third in tonnage shipped but first in the value per ton shipped (McGowan 1961).

The 1920s, however, saw a decrease in passenger service, which had surged during the turn of the century. Even with the launching of the luxurious *Delta King* and *Delta Queen*, at a cost of $1,000,000 each, by the Sacramento Transportation Company in 1927 (Garvey 1995), passenger traffic continued to decline. The most popular boats carried a total of 102,000 passengers in 1921 but only 61,000 in 1929.The effects of the depression led the remaining steamboat companies (Sacramento Navigation Company, California Transportation Company, and Fay Transportation) to consolidate in January 1932, forming River Lines Inc. (Walters 1987, McGowan 1961). This consolidation was not enough to save the industry, and collapse was imminent. A fire in August 1932 destroyed 11 vessels and damaged three others, all of which had been chained together just south of the I Street Bridge. Of these, eight riverboats and two barges were owned by River lines and included the *Sacramento* and *San Joaquin Nos. 2* and *4*. Most of the River Lines vessels were either obsolete or unprofitable, so many people were suspicious about the origin of the fire. Thereafter, construction at the shipyard focused on diesel tugs and steel barges. Additional financial troubles faced the company after three labor strikes between 1934 and 1937. With the onset of World War II, the steamers were used to carry troops on San Francisco Bay, and following the war commerce on the river was primarily by tug, until completion of the deep-water channel into West Sacramento in 1963 (McGowan 1961).

PREVIOUS STUDIES AND RECORDED SITES

Four cultural resource investigations have taken place on small portions of the project site or directly adjacent to the site (Table 3.13-1). Surveys were conducted for a fiber optic line along E Street, which forms the boundary of the River 3 area (Jones & Stokes 1999); for a City-sponsored riverfront improvement project (Jones & Stokes 1996); and for sewer improvements located along G Street to Third Street and along Third Street between West Capitol Avenue and F Street (Eddy and McIvers 1989, Glover and Bouey 1990). The Eddy and McIvers (1989) study resulted in the documentation of a resource (site CA-Yol-27) that could be affected by this project. An additional nine investigations have taken place within one-quarter mile of the project site and have resulted in documentation of two resources: the Southern Pacific Railroad (Site P-57-000400), and four large wooden ship-anchoring cleats and two smaller piling clusters (P-57-000423).

Table 3.13-1
Cultural Resource Studies Previously Conducted in the Immediate Vicinity of the Project Site

NWIC Report Number	Author (Date)	Title	Identified Resources
S-12191	Glover and Bouey (1990)	Sacramento Metropolitan Area Cultural Resources Survey, Sacramento and Yolo Counties, California	None
S-22464	Jones & Stokes (1999)	Cultural Resource Inventory Report for the Williams Communications, Inc. Fiber Optic Cable System Installation Project, Pittsburg to Sacramento, California	None
S-11910	Eddy and McIvers (1989)	Evaluation of Impact of the Raley's Landing Assessment District: Broderick Area Sewer Improvements Project on Archaeological Site CA-YOL-27, West Sacramento, California	CA-YOL-27 – portions may be on project site
S-18031	Jones & Stokes (1996)	Archaeological Inventory and Determination of Effect for the City of West Sacramento Riverfront Improvements Project, Yolo County, California	Three NRHP properties – none on project site

In 1986, before the 1989 Eddy and McIvers study that addressed site CA-Yol-27, Peak & Associates documented the location of this site (Peak & Associates 1986). This study found archaeological deposits extending at least 200 centimeters below the surface. Prior documentation prepared by Bill Prichard in 1964 indicated that the remains of at least 16 individuals had been removed from this locale. Although the documented remains are indicated as being within a 60- by 75-meter (m) area, Peak & Associates, quoting neighborhood residents, indicated that artifacts and human remains have been found in excavations extending over a 600- by 750-m area, which would include large portions of the River 3 area and the Washington Street property. Chemical analysis of soils and monitoring of excavations associated with sewer line improvements indicate that prehistoric cultural midden and fragments of human bone are located along G Street between Fourth and Sixth Streets (Eddy and McIvers 1989). Because the bone fragments were not associated with an articulated burial, they were reburied in the trench.

According to the current General Plan, no historic districts are located on or in the vicinity of the project site (Yolo County 2005). The directory of properties in the Historic Property Data File for Yolo County lists numerous structures within one-half mile of the project and four structures that were once on the River 3 area, at 511, 517, 519, and 521 Third Street. However, none of the structures identified for the River 3 area are still present; they were removed sometime following 1986, when they were documented by Kathleen Les for the Redevelopment Plan for Project No. 1 (WPM Planning Team 1986). These properties are briefly discussed below:

- **511 Third Street.** Built ca. 1890, this structure was a boxy two-story residential structure with a nearly flat roof and shiplap siding. The entrance was poorly defined and set beneath a small lean-to overhang in the apex of two wings. The structure was built by Percy Graves, a warehouseman and truck driver for Isadore R. Graves, and the house appeared to have undergone extensive alterations, which modified the front façade. Originally, the house may have been located at 517 Third Street.

- **517 Third Street.** Also built around 1890, this structure differed from that at 511 Third Street in that the central stairway led to a second-story entrance beneath a recessed corner porch. An angled bay window was present on the first and second levels. This house was also built by Percy Graves for himself and his wife.

- **519 and 521 Third Street.** These houses were almost visually identical and appear to have been constructed ca. 1895. They were delta-style Victorians with central stairways leading to elevated entrances. The roofs were hipped and gabled. An angled bay window was located to the side of the stairs and juxtaposed with an ornamental porch with brackets and milled columns. Both houses were built by a Mr. Gainsley and were two of several in the neighborhood of the same type that he built.

3.13.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Prefield Research

To determine whether any previously documented or unrecorded cultural resources were present on or immediately adjacent to the project site, background research and several field investigations of the project study area were conducted. Prefield research consisted of record searches at the Northwest Information Center (NWIC) and North Central Information Center (NCIC) of the CHRIS. Records curated by the NWIC and NCIC include California Department of Parks and Recreation (DPR) Series 523 archaeological site records, site location maps, maps of previous study coverage, NRHP nomination forms, and relevant historical documentation and maps. Prefield research also involved contacting various state and local agencies, organizations, and individuals that might be knowledgeable regarding the archaeological, ethnographic, and historic context of the project area.

The NCIC and NWIC reviews consisted of, but were not limited to, the following sources, publications, and depositories of archival information:

- *National Register of Historic Places* (National Park Service 1996 and computer updates from 1966 through 2000),
- *California Register of Historical Resources* (State of California 2001),
- *California Points of Historical Interest* (State of California 1992 and updates),
- *Historic Spots in California* (State of California 1966),
- *Directory of Properties in the Historical Resources Inventory* (State of California 1976),
- West Sacramento Historical Society,
- Yolo County Historical Society, and
- Sanborn Fire Insurance Maps dated (1895, 1915, 1950, 1952, 1957, and 1960).

NRHP/CRHR-Eligible Properties

A review of historic property files indicates that there are five resources adjacent to or in the vicinity of the project site that are listed on the NRHP and the CRHR. An additional resource, which has not been formerly documented, is the site of the Yolo County courthouse (1851–1857). It appears to have been located north of E Street, along the west side of the Sacramento River (WPM Planning Team 1986). Resources currently listed on the NRHP and the CRHR are described briefly below:

- **First Pacific Coast salmon cannery site** is situated opposite the foot of K Street on the west (Yolo County) side of the Sacramento River. Listed in 1966, this site is significant based on its importance to early commerce during the period 1850–1874. Apparently, there are no remains of this operation, which floated on a scow in the river (Jones & Stokes Associates 1996). Currently, the area surrounding the site is landscaped as a river parkway directly southeast and adjacent to the River 2 area.

- **I Street Bridge** was added to the NRHP in 1982 and is significant because of its association with the Southern Pacific Railroad and the unique architectural and engineering features of its American Bridge Company span. The bridge was constructed in 1911 to replace the Southern Pacific's earlier timber Howe truss swing span bridge, and the period of significance is from 1900 to 1924. Although minor changes in the setting occurred in 1937 and 1959, when new approaches were constructed, the bridge maintains its integrity of location, setting, materials, workmanship, feeling, and association.

- **Tower Bridge,** which is also known as the M Street Bridge and Capitol Avenue Bridge, was constructed in 1935. At the time of its completion, the Tower Bridge carried transcontinental traffic as well as traffic between San Francisco and Portland. It also served as the gateway to the state Capitol, with the west front of the Capitol building directly east of the bridge down M Street (today Capitol Mall). It was this relationship that resulted in the selection of an architectural style that would be aesthetically pleasing and link the main roadway with the Capitol building. It is significant for its role in the development of modern automobile transportation and its association with early auto routes. In addition, the bridge is significant for its unique architecture and engineering, with a period of significance spanning the time frame of 1925 to 1949. At the time of its nomination, the bridge possessed integrity of location, setting, materials, workmanship, feeling, and association.

- **Old Sacramento Historic District** is located directly east of the proposed project site, on the east (Sacramento County) side of the Sacramento River. This district is significant for its association with historically important events related to early exploration/settlement, industry, transportation, and communications spanning the time frame of 1825–1899. Although the historic feeling of the district has been compromised by the construction of massive freeways on three of the four sides, it has retained the association of the individual building elements, most notable of which are the B.F. Hastings Building, western terminus of the Pony Express; the Big Four Building, moved from another location; the Adams Building, the second and last Pony Express terminal; and the Darius Ogden Mills Bank, which was associated with the financing of the Comstock Mines.

- **J Street Wreck** is a shipwreck identified as being located in the Sacramento River at the foot of J Street.

Native American Consultation

Although not strictly required under CEQA, given the potentially sensitive archaeological nature of the project area, appropriate Native American groups and representatives were contacted about the Raley's Landing project. Initiation of this contact included a letter to the Native American Heritage Commission (NAHC) to request a search of the NAHC Sacred Lands Files and a list of individuals and groups who might have an interest in or knowledge of culturally sensitive areas in the project area. No sacred or other culturally significant sites were identified, according to the response received from the NAHC. Native American individuals and groups identified on the NAHC list were contacted. These included Kesnor Flores, Elaine Patterson, and Bill Combs with the Cortina Band of Indians; Paula Lorenzo, chairperson with the Rumsey Indian Rancheria of Wintun; the Wintun Environmental Protection Agency (located in Williams); and Randy Yonemura, Native American consultant. Followup letters were sent to all representatives, and followup telephone calls were made to Kesnor Flores and Randy Yonemura. Before subsurface investigations were conducted (see below), a meeting was held with Mr. Yonemura to discuss the proposed field methods and to request any information that he had that would be of value to the analysis being conducted for the proposed project. Mr. Yonemura and his assistant, Mr. Ernest Faircloth, served as Native American monitors during subsurface investigations, at which time Mr. Yonemura expressed concern over the sensitivity of the area and the potential for the discovery of Native American archaeological deposits and burials.

FIELD INVESTIGATIONS

The project site was subjected to an intensive pedestrian cultural resources inventory on March 21, 2005, by EDAW archaeologists. The surface inventory revealed the locations of structural remains possibly related to residential occupation and industrial activities that took place in the area during the 19th and 20th centuries. However, surface visibility was extremely limited in some areas because of vegetation, the presence of gravel surface in parking areas, and other factors, and little could be determined regarding the exact nature and associations of the documented features.

To more thoroughly assess the nature of the historic-era cultural resources on the project site and to determine whether prehistoric sites also could be present, EDAW archaeologists conducted a subsurface testing program during the week of May 23–27, 2005. These test excavations included the placement of a total of 21 backhoe trenches in the River 1, River 2, and River 3 areas, as well as the Washington Street property. A single 3- by 3-foot test excavation unit was placed in the southern portion of the River 2 area in a location that appeared to have potential for historic-era features and artifacts. The results of the subsurface testing at each of the four areas that make up the Raley’s Landing project site are summarized below.

It should be noted that the subsurface excavations conducted on the project site were limited to the excavation depth of the backhoe. Because of the dynamic nature of the Sacramento River’s channel and because of frequent flood episodes as noted in historic accounts and evidenced in geomorphological studies of the general region, prehistoric and early historic-era resources could be buried under deep alluvial deposits, below the depth reached by the subsurface testing. In addition, historic research indicates that the project area was subjected to varied and intensive residential and commercial development during the 19th and 20th centuries. Such development and the subsequent demolitions often lead to the deposition of deep fill strata, further covering potentially significant archaeological materials of interest to the Native American and scientific communities.

Washington Street Property

Eight trenches were excavated on the Washington Street property in areas ranging from the north, along G Street, to the south, near the edge of West Capitol Avenue. In general, all these trenches exhibited similar stratigraphy consisting primarily of flood-deposited silts and sands. No cultural materials, other than recent debris, were noted in the excavations. No midden deposits (organic-rich soils and sediments frequently associated with intensive Native American occupation) were noted. There was little variation, if any, between the stratigraphic profiles of these trenches, most of which were excavated to depths nearing or in excess of approximately 10 feet.

River 1 Area

Documentation clearly indicates that virtually the entire River 1 area was deeply excavated in the recent past during the construction of the Ziggurat and the Sacramento River levee located immediately to the east. Such excavations would have removed any traces of Native American occupation or activities and destroyed any early historic remains, buildings, or structures. However, to confirm the nature and depth of this disturbance, a single backhoe trench was dug near the northwest corner of the property. The trench profile exhibited the fill and excavation deposits to a depth of at least 10 feet, with no indications of undisturbed deposits being noted. Consequently, it appears confirmed that this entire property was disturbed and that any cultural resources were highly disturbed, removed, or destroyed to a depth of at least 10 feet by construction and excavation activities.

River 2 and River 3 Areas

A total of 12 backhoe trenches and one test excavation unit were dug in the River 2 and 3 areas. Sanborn Fire Insurance Maps and the results of additional research indicate that much of this area was intensively developed with residential and commercial structures throughout the 19th and early 20th centuries. The trenching revealed the presence of numerous structure and building remains and debris dating to relatively recent times. However, in most of the trenches, below approximately 2–3 feet from the present-day surface, an intact ground surface often containing scattered charcoal and indications of 19th century occupation was noted. In the area west of Second Street, this ground surface was not always distinct, and it was often disturbed by later intrusions, such as building foundations and materials.

One documented cultural resource, the site of the California Transportation Company Shipyard (Temporary number RL1), is located in the River 3 area. The results of research (described in more detail in Section 3.13.2, “Existing Conditions”) indicate that this locale functioned as a shipyard involved in the building and repair of steamships and barges for a period of almost 100 years beginning circa 1859 and extending into the late 1940s to early 1950s. During this time frame, the shipyard was a major component of the steamship operations of the California Transportation Company, California Steamship Navigation Company, and River Lines, which provided a vital transportation link for the movement of commercial freight and passengers between Sacramento and points north and access to world ports in the San Francisco Bay.

Although no standing structures remain from these operations, archaeological investigations conducted for the proposed project have identified extensive remains in subsurface contexts, primarily within the upper 12 inches of the surface and extending up to 72 inches in depth. The results of test excavations indicate that with the exception of a single subsurface feature, which appears to be the remains of a blacksmith/forge operation, the artifactual remains appear to span the entire 75–100 years of operation, and so far cannot be linked to a specific time frame or manufacturing or repair operation. Nails, spikes, bolts, and various fittings characteristic of wood ship/barge construction were recovered throughout the area. Additional artifacts, including various tools, machine parts, ceramics, and glass, were documented as well, but on the site surface and in the shallower deposits, they were heavily mixed. This mixing occurred not only in the artifact types, but in their approximate date ranges as well, with materials potentially dating to the mid-1800s to late 1800s mixed in with materials dating to the mid-1900s, such as a brass life-boat data plate with a 1943 date. The blacksmithing feature appears to be intact, but there are no associated artifacts that could be used to determine function or relationship to the shipyard activities. Although these archaeological deposits do not appear to be a depository of information that could further an understanding of the historic ship-building yard and its operations, the results of excavations indicate that the sediments do exhibit stratigraphy. Additional subsurface features may be present, some of which may date to mid-19th century and the early ship-building period, but they would be buried beneath up to 10 feet of deposits.

Test trenches in the River 3 area east of Second Street, once dug below the surface artifact concentrations and sandy fill, revealed the presence of a dark soil stratum similar in appearance to that noted west of Second Street. However, mid-19th century artifacts were more highly concentrated east of Second Street, suggesting a more intensive and better preserved occupation and use of this portion of the River 3 area. The test excavations covered only a small area, so it is uncertain whether this stratum would contain artifacts related to the shipyard operations. An intact mold-blown bottle, a clay smoking pipe bowl, and fragments of ceramics that appear typical of mid-19th century manufacture suggest an early date for this deposit. However, the artifacts are generally domestic in nature and may be related to residential occupation of the area and not the industrial enterprises that once stood nearby.

Although the results of test excavations in the River 2 and River 3 areas demonstrate the presence of an intact and early historic-era component, traces of earlier prehistoric occupation were also uncovered. Test excavation unit 1, placed in the southeast portion of the River 3 area, contained large quantities of debris and metal that may be related to the shipyard and later activities, structures, buildings, and commercial enterprises. However, mixed in with the later historic artifacts were two prehistoric items: a single stemmed-variety projectile point and a small white glass trade bead often referred to as a “pony bead.” Because of the somewhat generic nature of the project point form, it is difficult to date although the overall style suggests a somewhat earlier period of manufacture. The trade bead, however, is one of the more common varieties found in the region and probably dates to the early decades of the 19th century. Regardless, both artifacts were found in a mixed and highly disturbed context, indicating that the area, at least where test excavation unit 1 was placed, most likely does not contain intact prehistoric resources.

Eligibility Assessments

Regarding the eligibility of site RL1 for inclusion on the CRHR, the results of archival research indicate that Captains Nels Anderson and Andrew Nelson were the original owners of the Sacramento Transportation Company, but no information was found suggesting that they were men of great importance or men who were instrumental in the early economic success of the region. Therefore, the site does not appear to qualify for eligibility under Criterion b. Although concrete abutments, slabs, and what appear to be the remains of a septic tank are present, there is a lack of a built environment that would qualify the site as eligible for its architectural and artistic attributes (Criterion c). As mentioned above, the archaeological remains discovered thus far do not appear to possess sufficient integrity that can further add to an understanding of the history of ship-building and repair operations; therefore, the site does not contain data that would qualify for eligibility under Criterion d. However, this site does appear to be eligible at the local level for its contribution to early steamship transportation on the Sacramento River, from the 1850s until circa 1932 (Criterion a).

At this stage, it is not possible to clearly assess the nature and integrity of the mid-19th century deposits uncovered in the River 2 and River 3 areas. Although the domestic nature of the artifacts suggests their domestic rather than industrial origin, additional research would be required to better determine their direct associations. Such investigations would better clarify the date ranges of the artifacts, the integrity of the noted stratum, and the origins of the archaeological materials.

Thresholds of Significance

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the proposed project would result in a significant impact. These thresholds of significance are based on the State CEQA Guidelines. A cultural resources impact is considered significant if implementation of the proposed project would do any of the following:

- cause a substantial adverse change in the significance of a unique archaeological resource or a historical resource as defined in 21083.2 of CEQA and 15064.5 of the State CEQA Guidelines, respectively, or

- disturb any human remains, including those interred outside of formal cemeteries.

Section 15064.5 of the State CEQA Guidelines defines “substantial adverse change” as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings.

Section 21083.2 of CEQA defines “unique archaeological resource” as 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 one or more of the following criteria: (1) that it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; (2) that it has a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) that it is directly associated with a scientifically recognized important prehistoric or historic event or person.

Section 15064.5 of the State CEQA Guidelines defines “historical resource” as a resource (1) listed on, or determined to be eligible by the State Historical Resources Commission for listing on, the CRHR; (2) listed in a local register of historic resources or as a significant resource in a historical resource survey; or (3) considered to be “historically significant” by a lead agency as supported by substantial evidence in the record. Generally, a resource shall be considered by the lead agency to be “historically significant” if it meets any of the following criteria for listing on the CRHR: (a) is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage; (b) is associated with the lives of persons important in our past; (c) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value; or (d) has yielded, or may be likely to yield, information important in prehistory or history.

To be eligible for listing on the CRHR, a property must have both historic significance and integrity. Integrity is judged by considering the property’s retention of location, design, setting, workmanship, materials, feeling, and association.

IMPACT ANALYSIS

IMPACT 3.13-1	Cultural Resources — Destruction of or Damage to Known Cultural Resources. *Development of the project would result in impacts on the location and remains of the California Transportation Company Ship Building Yard. This impact would be **significant**.*

One previously unrecorded cultural resource, the remains of the California Transportation Company Ship Building Yard, was found during the background research and inventory conducted for this project. Archaeological test excavations indicate that significant deposits and possibly features associated with the shipyard facilities are present in the project area. Remains of the shipyard have been identified in the River 3 area, and the possibility exists that additional remains associated with the resource might be found in the River 2 area. This shipyard was an important and prominent element in the development and support of the navigation of the interior waters of California. The recovery of archaeological materials associated with the ship-building operations would be important in further documenting this industry, which was instrumental in the economic and social development of the Sacramento area. In addition, the operation was associated with the historic Southern Pacific Railroad and its part owner and founder, Charles Crocker. For these reasons, this resource is considered eligible for listing on the CRHR under Criterion a. Grading and excavation required during the development of these two areas would damage and perhaps destroy the remains of this historic resource. This impact is considered **significant**.

Mitigation Measure 3.13-1: Conduct Intensive Archaeological Monitoring at the Site of the California Transportation Company Shipyard, and Implement Recovery Plan, if Needed

During all ground-disturbing activities in the River 3 area east of Second Street, monitoring shall be conducted by two qualified professional archaeologists. If potentially significant materials are uncovered, all ground-disturbing activities in the area of the find must cease. The area in which the work must stop shall be the minimum area necessary to ensure protection of the find, as determined by the archaeologists. The archaeologists shall determine the extent, character, and potential significance of the find and, and in cooperation with the City shall, develop appropriate mitigation intended to recover and document the encountered materials. Additional mitigation could include but not necessarily be limited to photodocumentation, additional archival research, subsurface testing, and archaeological excavation.

With implementation of this mitigation measure, the data related to known cultural resources at the site would be collected, meeting the requirements of CEQA; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.13-2 **Cultural Resources — Destruction of or Damage to Identified NRHP Properties.** *Development of the proposed project would not directly affect NRHP properties but would alter the current setting in the vicinity of these properties or their NRHP status. This impact would be* ***less than significant****.*

Five NRHP properties have been documented in the vicinity of the project area: the I Street Bridge, the Old Sacramento Historic District, the J Street wreck, the first Pacific Coast salmon cannery, and the Tower Bridge (see the discussion of NRHP/CRHR-eligible properties in the "Analysis Methodology" section). The proposed development would not directly affect any of these resources, but it would alter the view of and setting around these resources. Proximity of the new development with these listed properties could affect the NRHP integrity of these structures. The setting of the I Street Bridge, the Old Sacramento Historic District, and the J Street wreck has already been extensively modified by previous development in the vicinity, so the addition of development associated with the proposed project would have no adverse effect on these resources. Because no physical remnants of the first Pacific Coast salmon cannery site are present and the setting has been extensively modified through past development, the proposed project also would not affect this site. Regarding the Tower Bridge, development is planned directly northwest of this structure. However, the integrity of the bridge's setting and association relate to the relationship of the bridge with Capitol Mall and the state Capitol. Because development would not affect this setting and relationship, the proposed project also would not affect the NRHP integrity of this structure. This impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.13-3 **Cultural Resources — Destruction of or Damage to As-Yet-Undiscovered Archaeological Resources.** *Development of the proposed project could involve grading and excavation to a depth of several meters, which has the potential to disturb or damage any as-yet-undiscovered archaeological resources. This impact is considered* ***potentially significant.***

Development on the project site would involve grading and excavation, which could potentially reach a depth of several meters. These activities could disturb or damage any as-yet-undiscovered archaeological resources. Surface reconnaissance and limited subsurface testing did not identify the presence of the extensive, intact subsurface archaeological deposits associated with CA-Yol-27 or other evidence of intensive Native American occupation. However, intact soil strata that may contain as-yet-undiscovered prehistoric archaeological resources exist on the project site. Previous cultural resource investigations and oral reports indicate that human remains and significant archaeological traces have been recovered from locations throughout the immediate project vicinity. It is likely that archaeological resources have been covered by later river and fill-deposited soils and sediments that could be removed during project-related construction activities.

Because cultural resources or human remains may be located in the project area, this impact is considered **potentially significant**.

Mitigation Measure 3.13-3: Monitor Excavations and Stop Work if Cultural Resources Are Discovered during Construction Activities, and Implement Recovery Plan, if Needed

(a) Qualified professional archaeologist(s) shall be on-site to monitor all significant ground-disturbing activities. Significant ground-disturbing activities are defined as those affecting soils and sediments below 1 foot in depth on all properties on the project site. Such activities can include, but are not necessarily limited to, trench and basement excavation and grading. Pile driving, soil compaction, repeated working of soils previously disturbed by project-related tasks, or filling activities do not need to be monitored. Construction personnel must be provided adequate training by a qualified professional archaeologist in the methods to be followed if subsurface archaeological deposits and suspected human remains are discovered. Training would involve meeting with the construction crew before ground-disturbing activities begin, describing what cultural resources could be encountered, and instructing the members of the crew to contact a monitor if cultural resources are discovered.

Monitoring intensity may vary based on the sensitivity of the project area. A single archaeological monitor will be sufficient to monitor all significant ground-disturbing activities in the River 1 area. The same is true for the River 2 area; however, more intensive monitoring shall be conducted in the River 3 area east of Second Street, as described for Mitigation Measure 3.13-1, because of the presence of known archaeological materials. Similarly intensive monitoring involving one monitor per active machine will be necessary in the northern one-third of the Washington Street property east of Fourth Street, in the vicinity of where previous ground-disturbing activities have uncovered human remains. A single monitor will be sufficient for the remainder of the Washington Street property. In the portion of the River 3 area west of Second Street, one archaeological monitor shall monitor no more than two active earth-moving machines because of the presence of a potentially historically important soil stratum that may contain or cover significant historic-era remains west of Second Street in the River 3 area.

(b) If subsurface prehistoric or historical archaeological remains are identified during construction, work within the vicinity of the affected areas must stop until the find can be evaluated by a qualified archaeologist (which may be the on-site monitor, depending on the technical specialty of the monitor). The area in which the work must stop shall be the minimum area necessary to ensure protection of the find, as determined by the archaeologist. If the find is determined to be potentially significant according to CEQA standards, an appropriate treatment plan must be developed and implemented to mitigate adverse effects, and any excavated materials should be donated to an appropriate museum or cultural center. An appropriate treatment plan could include but not necessarily be limited to photodocumentation, additional archival research, subsurface testing, and archaeological excavation.

With implementation of this mitigation measure, the data related to cultural resources discovered during construction activities would be collected, meeting the requirements of CEQA; therefore, this impact would be reduced to **less than significant**.

IMPACT 3.13-4	Cultural Resources —Discovery of Human Remains. *Development of the proposed project has the potential to disturb isolated human remains. This impact is considered **potentially significant**.*

Given the proximity of known Native American interment sites to the project area and the overall prehistoric archaeological sensitivity of the Raley’s Landing project site, there is a possibility that project-related ground-disturbing activities would encounter human remains. This impact is considered **potentially significant**.

Mitigation Measure 3.13-4: Stop Work if Human Remains are Uncovered during Construction.

California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are described in California Health and Safety Code Section 7050.5 and Section 7052 and California Public Resources Code Section 5097.

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all such activities in the vicinity of the find shall be halted immediately and the agency or the agency’s designated representative (in this case, the City or the City’s designated representative) shall be notified. The area in which the work must stop shall be the minimum area necessary to ensure protection of the find, as determined by the archaeologist. The City or the archaeological monitor shall immediately notify the county coroner. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by telephone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The responsibilities of the City for acting upon notification of a discovery of Native American human remains are identified in detail in the California Public Resources Code Section 5097.9. The City or its appointed representative and the professional archaeologist will consult with a Most Likely Descendent (MLD), determined by the NAHC, regarding the removal or preservation and avoidance of the remains and determine whether additional burials could be present in the vicinity.

With implementation of this mitigation measure, adverse impacts on the uncovered human remains would be minimized or eliminated; therefore, this impact would be reduced to **less than significant**.

4 ALTERNATIVES ANALYSIS

4.1 INTRODUCTION

The guiding principles for the selection of alternatives for analysis in this EIR are provided by the California Environmental Quality Act Guidelines (State CEQA Guidelines) (Section 15126.6), which specify that the alternatives analysis must:

- describe a reasonable range of potentially feasible alternatives to the project that could feasibly attain most of the basic objectives of the project;
- consider alternatives that could reduce or eliminate any significant environmental impacts of the proposed project, including alternatives that may be more costly or could otherwise impede the project's objectives; and
- evaluate the comparative merits of the alternatives.

The focus and definition of the alternatives evaluated in this EIR are governed by the "rule of reason" in accordance with Section 15126.6(f) of the State CEQA Guidelines. That is, the range of alternatives presented in this EIR must permit a reasoned choice by the City of West Sacramento's (City's) decision makers. The State CEQA Guidelines (Section 15126.6) require that an EIR evaluate a "No-Project Alternative," evaluate a reasonable range of alternatives to the project, identify alternatives that were initially considered but then rejected from further evaluation, and identify the "environmentally superior alternative."

Although the State CEQA Guidelines (Section 15126.6[d]) require an evaluation of alternatives, they permit the evaluation to be conducted in less detail than is done for the proposed project. Consistent with Section 15126.6(d), sufficient information is provided in this EIR about each alternative to allow for a meaningful evaluation, analysis, and comparison of the alternatives with the proposed project.

The following discussion is intended to inform the public and decision makers of potentially feasible alternatives to the proposed project that could be implemented to attain the basic project objectives while substantially reducing one or more of the potentially significant effects of the project.

4.1.1 BASIC PROJECT GOALS AND OBJECTIVES

As stated above, one of the key factors in considering alternatives is whether they can feasibly attain most of the basic objectives of the project. The overall goal and key objectives of the Raley's Landing project (described in full in Section 2.3 of this EIR) are identified in the following text.

The overarching goal of the Raley's Landing project is the orderly and systematic development of an integrated, mixed-use community that is generally consistent with the goals and policies of the *West Sacramento General Plan* (General Plan) and *Washington Specific Plan* and is compatible with site characteristics. In support of this overarching goal are the following key objectives for the proposed project:

- to incorporate a concept of town or village centers by providing basic services within walking distance to development, as well as opportunities for employment and recreation;
- to create a mixed-use development that is a logical extension of adjacent uses, such as the existing Ziggurat office building;
- to incorporate the riverfront and city riverfront park into the project to enhance both the project and City's goal of increasing public use and enhancing the appearance of the riverfront;

- to stimulate planned development along the waterfront of West Sacramento, in turn creating a more inviting and safer waterfront environment for its residents;
- to increase office and retail job opportunities in West Sacramento and the residential component that accompanies such jobs;
- to integrate employment opportunities with residential neighborhoods of varying unit densities throughout the project area;
- to provide a modern, technologically efficient office facility suitable for the needs of a major financial institution or other large institutional office user;
- to provide a prudent investment for the project's developer/owner, balancing initial and long-term costs;
- to provide an office facility that would offer convenient access and secure parking for employees, business visitors, and members of the public and that would enhance its tenants' ability to attract and retain high-quality employees;
- to provide office facilities of sufficient size to allow one or more major users located in multiple facilities in the region to consolidate operations in one location;
- to satisfy the requirements of the City of West Sacramento's Inclusionary Housing Ordinance;
- to enhance the City's supply of high-quality housing that provides a range of housing opportunities available to residents from a wide range of economic levels;
- to further the development goals of the *Washington Specific Plan*; and
- to promote the development of aesthetically pleasing urban structures.

4.1.2 SIGNIFICANT EFFECTS OF THE PROPOSED PROJECT

The impacts associated with the proposed project are evaluated in Chapter 3 of this EIR. Table 4-1 identifies the 13 environmental issue areas evaluated in this EIR and indicates for each issue area whether implementing the project would result in a less-than-significant, potentially significant, or significant impact before mitigation and whether the impact can be mitigated to a less-than-significant level using feasible measures or if it would remain significant (and unavoidable). As shown in Table 4-1, implementing the project would result in significant or potentially significant impacts related to transportation and circulation, air quality, noise, public services, public utilities, geology and soils, hazards and hazardous materials, hydrology and water quality, biological resources, visual resources, and cultural resources. After mitigation, significant impacts would remain for transportation and circulation, air quality, noise, and visual resources. These impacts are identified as significant and unavoidable. See Chapter 7 of this EIR for a more detailed discussion of the proposed project's significant and unavoidable impacts.

Table 4-1
Summary of Project Impact Levels before and after Mitigation

Environmental Issue Area	Before Mitigation	After Mitigation
Land use and planning	Less than significant	Less than significant
Population, employment, and housing	Less than significant	Less than significant
Transportation and circulation	Significant	Significant (unavoidable)
Air quality	Significant	Significant (unavoidable)

Table 4-1 (continued) Summary of Project Impact Levels before and after Mitigation		
Environmental Issue Area	Before Mitigation	After Mitigation
Noise	Significant	Significant (unavoidable)
Public services	Significant	Less than significant
Public utilities	Significant	Less than significant
Geology and soils	Potentially significant	Less than significant
Hazards and hazardous materials	Significant	Less than significant
Hydrology and water quality	Significant	Less than significant
Biological resources	Significant	Less than significant
Visual resources	Significant	Significant (unavoidable)
Cultural resources	Significant	Less than significant
Source: Compiled by EDAW 2005		

4.2 ALTERNATIVES CONSIDERED AND REJECTED FROM FURTHER CONSIDERATION

At multiple meetings attended by the City, the project applicants, and the consultant, the planning history of the project area and the Raley's Landing and Washington Street properties in particular was discussed. These meetings included discussions about alternatives that had been considered in the past and those that were still being considered as development options for the properties.

An off-site alternative and variations in the proposed project have been considered for their potential to reduce the environmental impacts of the proposed project. However, they were rejected from further consideration because they were plainly infeasible, would not attain even the most basic of project objectives, or were unable to reduce any of the significant impacts of the project. These rejected alternatives are described below.

4.2.1 OFF-SITE ALTERNATIVE

Off-site alternatives generally are considered in EIRs when one of the means to avoid or eliminate the significant impacts of a project is to develop it in a different available location. Under case law, such alternatives are especially appropriate where a proposed project would put a site to uses different from those contemplated in the governing general plan, which presumably reflects land use policies reached after much deliberation. The *City of West Sacramento General Plan* identifies the project area as an area that ultimately would be developed with a mix of uses, including office, commercial, and residential uses, that capitalize on the proximity of the riverfront. According to the *Washington Specific Plan,* the plan area would be developed with approximately 1,300 new residential units, a 428-room hotel, 2,509,100 square feet of new office space, and 187,000 square feet of new commercial/retail space, all designed to link with the central business district, located west of the site, and the riverfront, located east of the site. In addition to these planning documents, the Raley's Landing Development Agreement and the Planned Development – 30 (PD-30) text, both of which address the River 1, 2, and 3 areas of the project site, provide more specific detail on the mixed-use development envisioned in the General Plan and *Washington Specific Plan*. Thus, all the planning documents pertinent to the project site envision the property as an area that will be developed with a mix of office, commercial, and residential uses, as proposed for the Raley's Landing project.

To attain the basic objectives of the project, the project would need to be located in West Sacramento (e.g., increase office and retail opportunities in West Sacramento and the residential component that accompanies such jobs), and, more specifically, the project would need to be located in the Washington Specific Plan area and along the riverfront in particular (e.g., create mixed-use development for the city that is a logical extension of adjacent uses, such as the Ziggurat; incorporate the riverfront and city riverfront park into the project to enhance both the project and City's goal of increasing public use and enhancing the appearance of the riverfront; further the development goals of the *Washington Specific Plan*). The project area represents the only available undeveloped urban area in the city of West Sacramento near the riverfront that could provide the mix of uses that would attain the basic project objectives. The undeveloped property north of the River 3 area in the Washington Specific Plan area would meet many of the project objectives, but that area is already planned for other development, so development north of that area would not meet the objective of incorporating River Walk Park into the project. Given these considerations, there are no known alternative sites that could feasibly meet the project objectives or that would reduce the significant impacts of the project. For this reason, an off-site alternative is not evaluated further in this EIR.

4.2.2 VARIATIONS OF THE PROPOSED PROJECT

Even before the city of West Sacramento was incorporated in 1987, the vision for the area along the Sacramento River (including the River 1, 2, and 3 areas) involved a mix of uses that would take advantage of the immediately adjacent riverfront. The original PD-30 text, adopted on May 15, 1986, describes a variety of commercial, office, and residential uses and encourages development of mixed-use structures. The fact that this vision has remained essentially intact for two decades suggests that this approach to development would make efficient and logical use of the site. The vision for the site has been consistent for nearly 20 years; based on information from the applicants and City staff only minor variations of the proposed project were considered for the site before the current project was proposed. For the Washington Street property, the abandonment of Fourth Street between G Street and West Capitol Avenue was considered but rejected in favor of retaining this segment of Fourth Street as a city street. Slight variations in the placement of the structures on the River 1 area also were considered, but the current design reflects the City's wish to preserve the view corridor from the Ziggurat. Two towers rather than one initially were considered for the residential development planned for the River 2 area. However, the site is only slightly larger than 1 acre, and development restrictions related to City-required setbacks and an existing drainage easement left the developable area too small for two separate structures; in addition, the two structures would have created an unacceptable infringement on the view corridor to the Sacramento River. Various building massing options were considered for the River 3 area; however, the proposal identified in the project description is considered by the City and the developer as best at balancing various factors, such as preserving views, ensuring access, ensuring constructability, and meeting City guidelines.

4.3 DESCRIPTION AND ANALYSIS OF ALTERNATIVES

The following alternatives are evaluated in this section:

- No-Project (No Development) Alternative,
- No-Project (Existing Plans) Alternative, and
- Reduced Development Alternative.

Each alternative is described and an analysis is provided of the alternative for each environmental issue area evaluated in this EIR. The analysis is comparative, identifying whether the alternative would result in impacts that are greater, lesser, or similar in comparison to those of the proposed project. This determination is made in brackets at the end of the discussion for each environmental issue analyzed.

4.3.1 NO-PROJECT (NO DEVELOPMENT) ALTERNATIVE

Under this alternative, no actions would be taken on the project site. Although both the General Plan and the *Washington Specific Plan* foresee development on this site, this analysis uses existing conditions as the "no project" scenario to allow consideration of a full range of alternatives. No development of the proposed site would occur; the Washington Street property would continue to be used for parking for Raley Field events, and the River

1, 2, and 3 areas would remain undeveloped property. Although this alternative is evaluated in this chapter, it is an unlikely long-term alternative for the site. Both the General Plan and the *Washington Specific Plan* designate the area for mixed-use development, signifying the intent that it ultimately will be developed with mixed uses. Essential infrastructure that would serve new development is already in place in the area (see Section 3.7, "Public Utilities"). Given the General Plan and *Washington Specific Plan* designations for urban development and the large interest in the development of West Sacramento, future development of the site is extremely likely.

Consistent with CEQA requirements, the No-Project (No-Development) Alternative is evaluated in this EIR. This alternative would not meet any of the objectives of the proposed project. It also would not be consistent with the intent of the General Plan and *Washington Specific Plan,* which call for the development of mixed office, commercial, and residential uses in the project area.

IMPACT ANALYSIS

Land Use and Planning

The proposed project includes amendments to the Raley's Landing Development Agreement and PD-30 text. These amendments would not be required under the No-Project (No-Development) Alternative. If this alternative were to be adopted, however, the General Plan, *Washington Specific Plan,* Raley's Landing Development Agreement, and PD-30 text would need to be amended to substitute a status quo land plan for the mixed-use urban development presently contemplated for the project site in these planning documents. Because the land uses would remain unchanged under the No-Project (No-Development) Alternative, the land use impacts would be less than significant. Similarly, no significant land use impacts were identified for the proposed project. Thus, impacts for this alternative would be similar to those for the project with respect to land use. *[Similar]*

Population, Employment, and Housing

The No-Project (No-Development) Alternative would not generate any new residents, jobs, or residences in the city of West Sacramento. Implementing the proposed project would not generate new residents associated with construction activities, but the population would increase by approximately 2,026 persons with construction of up to 900 multifamily residential units. In addition, at buildout, the project would generate approximately 3,253 jobs. No significant impacts related to population, employment, and housing were identified for the proposed project, so implementing the No-Project (No-Development) Alternative would not reduce or avoid any significant impacts associated with the project. The No-Project (No-Development) Alternative would not generate population, employment, or housing and thus would not result in significant impacts with respect to this issue area. Because both the No-Project (No-Development) Alternative and the proposed project would not result in significant impacts, impacts for this alternative would be considered similar to those for the project with respect to population, employment, and housing. *[Similar]*

Transportation and Circulation

The No-Project (No-Development) Alternative would not involve any new development and thus would not generate any new traffic-related impacts. By comparison, the proposed project would generate 1,941 a.m. and 2,084 p.m. peak-hour trips and would significantly affect various intersections and roadways in West Sacramento and Sacramento (see Section 3.3). After mitigation, significant and unavoidable impacts would still occur at the Third Street/Tower Bridge Gateway, Third Street/J Street, and I Street/Jibboom Street intersections and along segments of U.S. Highway 50 (U.S. 50) and Interstate 5 (I-5). In addition, a significant and unavoidable impact could occur at the Jefferson Boulevard/Sacramento Avenue intersection if the improvements are not made before vehicle trips generated by the proposed project contribute to degradation of the level of service at the intersection to an unacceptable level. Implementation of the No-Project (No-Development) Alternative would avoid the project's contribution to these impacts, although cumulative development beyond the project site also would result in many of these impacts. *[Lesser]*

Air Quality

The No-Project (No-Development) Alternative would not involve any new development and thus would not generate new construction or operations-related air emissions. A total of 19,275 daily vehicle trips would be generated by the proposed project, which, along with stationary sources, would produce substantial emissions (see Section 3.4). The proposed project also would include new construction and operational activities, resulting in significant and potentially significant impacts before mitigation related to short-term construction-generated emissions, long-term operational project-generated emissions, and increases in stationary and mobile-source toxic air contaminants (TACs). After mitigation, residual significant air quality impacts would remain related to short-term construction and long-term operation emissions. The project also would have a less-than-significant impact related to increases in local mobile-source carbon monoxide (CO) concentrations. Implementation of the No-Project (No-Development) Alternative would not result in significant and unavoidable air quality impacts; therefore, implementing this alternative would result in lesser air quality impacts than the proposed project, although cumulative development outside the project site also would result in many of these impacts. *[Lesser]*

Noise

Under the No-Project (No-Development) Alternative, no new construction activities would occur, no new noise- or vibration-generating land uses or sensitive noise receptors would be developed, and no additional traffic would be generated. Therefore, there would be no increase in potential noise or vibration conflicts under this alternative. By comparison, implementing the proposed project would result in significant or potentially significant impacts related to short-term noise generated by construction activities, exposure to groundborne vibration during construction, increases in stationary- and area-source noise, increases in operational traffic noise, and land use compatibility with on-site noise levels. After mitigation, residual significant noise impacts would remain related to short-term construction noise and incompatibility with on-site noise levels. Implementation of the No-Project (No-Development) Alternative would not result in these significant and unavoidable noise impacts; therefore, this alternative would result in lesser noise impacts than the proposed project. *[Lesser]*

Public Services

The No-Project (No-Development) Alternative would not include any new development; therefore, implementing this alternative would not generate increased demand for fire protection, police service, public schools, or parks. By contrast, up to 900 multifamily residential dwelling units, in addition to office and commercial development, would be constructed under the proposed project, which would create significant demand for fire, police, and park services and facilities. Increased demand for public school facilities and services was not considered significant for the proposed project because elementary, middle, and high schools in the project area have sufficient capacity available to meet the demand associated with the proposed project. The significant public services impacts associated with the proposed project would be reduced to less-than-significant levels through implementation of recommended mitigation measures. Because implementing the proposed project would not result in any significant public services impacts after mitigation, the No-Project (No-Development) Alternative would not reduce or avoid any significant impacts related to this environmental issue. However, the proposed project would create an incremental increase in service demand that would not occur under the No-Project (No Development) Alternative. *[Lesser]*

Public Utilities

Under the No-Project (No-Development) Alternative, no new development would be constructed or operated at the project site; therefore, there would be no additional demand for water supply, wastewater service, solid waste management, electrical service, or natural gas service and no need for new facilities and infrastructure to support additional demand. By comparison, development of the proposed project would result in a significant impact related to increasing the demand for wastewater treatment facilities. The project would contribute to the need to expand the Sacramento Regional Wastewater Treatment Plant (SRWTP), construction of which would result in a significant and unavoidable air quality impact from short-term increases in oxides of nitrogen (NO_X) during construction. Several utility impacts would be less than significant before mitigation: demand for water supply and treatment capacity, demand for water conveyance and storage, demand for wastewater conveyance facilities, generation of solid waste, demand for electricity and required extension of electrical infrastructure, and demand for natural gas and required extension of natural gas infrastructure.

Implementing the No-Project (No-Development) Alternative would not result in increased demand for water supply and treatment capacity, water conveyance and storage, wastewater conveyance and treatment facilities, solid waste handling, electricity and required extension of electrical infrastructure, and natural gas and required extension of natural gas infrastructure; it also would avoid contributing to the significant and unavoidable air quality impact associated with expanding the SRWTP. Therefore, public utilities impacts associated with the No-Project (No-Development) Alternative would be lesser than those under the proposed project. *[Lesser]*

Geology and Soils

The No-Project (No-Development) Alternative would not include any new construction activities; the gravel parking lot and undeveloped property on the project site would remain in their current state. Therefore, there would be no potential increase in risks associated with a seismic event, construction-related erosion, unstable soil conditions, or corrosive soils. By comparison, implementing the proposed project would result in potentially significant risks to people and structures caused by strong seismic ground shaking, seismic-related ground failure, and unstable soil conditions and the potentially significant risk of structural damage caused by corrosive soils. However, all these impacts would be reduced to less-than-significant levels with mitigation. The impact of construction-related erosion hazards would be less than significant without mitigation. Because implementing the proposed project would not result in any significant impacts related to geology and soils after mitigation, the No-Project (No-Development) Alternative would have impacts similar to those of the proposed project. *[Similar]*

Hazards and Hazardous Materials

Under the No-Project (No-Development) Alternative, no new development would occur; therefore, no new facilities that use hazardous materials (e.g., dry cleaners, photo processors) would be located on the project site, and no new residents, workers, or visitors would have the potential to be exposed to existing or new sources of hazardous materials on the site. Detectable concentrations of petroleum hydrocarbons and heavy metals are present in subsurface soils and groundwater at the site but probably are not at levels that would trigger regulatory action requiring cleanup.

By comparison, implementing the proposed project potentially would result in the significant exposure of construction workers, residents, and others to hazardous materials at existing and new contaminated areas on the project site. However, this impact would be less than significant after mitigation. The use of hazardous materials would be a less-than-significant impact even without mitigation because the increased storage, use, and transport of hazardous materials during the construction and operation of project facilities would comply with local, state, and federal regulations. Because no significant impacts related to hazards and hazardous materials were identified for the proposed project after mitigation, implementing the No-Project (No-Development) Alternative would not reduce or avoid any significant impacts related to this environmental issue. However, because there would be fewer overall opportunities for workers and residents to be exposed to hazardous materials under the No-Project (No-Development) Alternative (e.g., fewer workers and residents in the area), impacts are considered slightly less than those associated with the proposed project. *[Lesser]*

Hydrology and Water Quality

Under the No-Project (No-Development) Alternative, no new construction would occur; therefore, there would be no potential increase in localized flooding, construction-related releases of sediment and contaminants into surface waters, or long-term degradation of water quality. Best management practices are not in place on the site and would remain absent under the No-Project (No-Development) Alternative. By comparison, implementing the proposed project would result in a significant increase in stormwater drainage and localized runoff, potentially causing localized flooding; potential for short-term construction-related soil erosion and water quality impairment; and potential long-term degradation of water quality. Mitigation measures identified in this EIR would reduce these impacts to a less-than-significant level. Because implementing the proposed project would not result in any significant impacts related to hydrology and water quality after mitigation, implementing the No-Project (No-Development) Alternative would not reduce or avoid any significant impacts related to this issue. However, because there would be fewer overall opportunities to adversely affect hydrology and water quality under the No-Project (No-Development) Alternative (e.g., no changes to volume or quality of stormwater runoff, no sediment release from construction activity), impacts are considered slightly less than those associated with the proposed project. *[Lesser]*

Biological Resources

The No-Project (No-Development) Alternative would not include any of the development proposed for the project site and thus would not disturb any existing on-site sensitive species or habitat. The project site would be retained in its existing state, with the Washington Street property remaining a gravel parking lot and the River 1, 2, and 3 areas remaining undeveloped areas covered with annual grassland and some trees. A relatively dense and continuous stand of remnant riparian forest would continue to occupy the eastern portion of the River 3 area. Under the No-Project (No-Development) Alternative, the site would continue to provide the existing type, extent, and quality of habitat. By comparison, the proposed project involves developing the site with urban uses, resulting in significant impacts on valley elderberry longhorn beetle, active Swainson's hawk nests, active raptor nests, remnant riparian habitat, and protected trees. These impacts would be reduced to less-than-significant levels with mitigation identified in this DEIR. The No-Project (No-Development) Alternative would avoid all these impacts. *[Lesser]*

Visual Resources

Under the No-Project (No-Development) Alternative, no new development would occur. Thus, there would be no alteration of the visual character of the project site, and no new sources of light and glare would be created. By comparison, implementation of the proposed project would result in significant impacts from lighting and shadow and could result in what may be perceived as a significant degradation of the site's visual character. New sources of nighttime light and glare would be created, but mitigation has been identified that would reduce this impact to less than significant. The cost to implement a redesign of the Washington Street property development that would substantially reduce the shadow impact on residences immediately north of the property would make this portion of the proposed project economically infeasible; therefore, this shadow impact is considered significant and unavoidable. The impact on visual character is considered significant and unavoidable, although this topic is highly subjective. The impacts relating to a scenic vista and damage to scenic resources within a state scenic highway would be less than significant without mitigation. None of these impacts would occur under the No-Project (No-Development) Alternative. *[Lesser]*

Cultural Resources

The No-Project (No-Development) Alternative would not require any construction activities and thus would have no impact related to the disturbance or destruction of any cultural resources. Under the proposed project, ground disturbance and development of new structures would occur, resulting in significant or potentially significant impacts related to destruction of or damage to known cultural resources, destruction of or damage to as-yet-undiscovered archaeological resources, and discovery of human remains. These impacts would be reduced to less-than-significant levels after mitigation. The impact of destruction of or damage to identified National Register of Historic Places properties would be less than significant without mitigation. Because the No-Project (No-Development) Alternative does not include any new development or ground disturbance, implementing the alternative would not result in any of these impacts. Therefore, cultural resources impacts would be less under this alternative. *[Lesser]*

IMPACT SUMMARY

Implementing the No-Project (No-Development) Alternative would not result in impacts greater than those of the proposed project in any environmental issue area, would result in lesser impacts in 10 issue areas, and would result in similar impacts in three issue areas. Significant and unavoidable impacts related to traffic, air quality, noise, and visual resources associated with the proposed project would not occur under this alternative.

4.3.2 NO-PROJECT (EXISTING PLANS) ALTERNATIVE

Under the No-Project (Existing Plans) Alternative, the project site would be developed as currently described in pertinent planning documents rather than as described for the proposed project. The four areas that make up the project site are located in the Washington Specific Plan area. In addition to being guided by the *Washington Specific Plan*, development of the River 1, 2, and 3 areas would be guided by the PD-30 text and the Raley's Landing Development Agreement. The plan for developing the River 1, 2, and 3 areas is particularly well defined in the development agreement. No such development agreement exists for the Washington Street property. The land use designations and zoning that apply to the Washington Street property are extremely flexible and would allow a variety of dramatically different development scenarios. The Washington Specific Plan EIR, for example, assumes that the property would be developed with 500,000 square feet of office uses and no other uses. Although this approach to development would be consistent with current land use designations and zoning and was assumed in the Washington Specific Plan EIR, it seems unlikely given the City's desire to promote mixed-use development in the project area, market factors, and other conditions. In its presentation of development that would occur on the project site under the No-Project (Existing Plans) Alternative, Table 4-2 combines the development described in the Raley's Landing Development Agreement for the River 1, 2, and 3 areas with a much more likely course of development for the Washington Street property. The development identified for the Washington Street property in this table represents a reasonable estimate given the current entitlements for the site, present market conditions, and the City's support for mixed-use development. Compared with the proposed project, the No-Project (Existing Plans) Alternative generally has a higher density of development, with more area dedicated to commercial, office, and hotel uses, and a lower level of residential development.

Because the No-Project (Existing Plans) Alternative involves development of a mixed-use development of residential, commercial, and office uses, it is essentially consistent with the objectives identified for the proposed project.

Table 4-2
Summary Comparison of Development under the No-Project (Existing Plans) Alternative and the Proposed Project

Land Use Type	No-Project (Existing Plans) Alternative	Proposed Project Development Potential
Office	933,500 square feet	845,000 gross square feet
Commercial	106,000 square feet	102,000 gross square feet
Residential	561 multifamily units	900 multifamily units (850 if hotel built)
Hotel and conference room	428-room hotel (including convention facilities and restaurant/bar)	300-room hotel, 15,000-square-foot conference room (The hotel and conference room are optional under the proposed project. If they are developed, the number of residential units would be reduced by 50.)

Sources: Pascoe, pers. comm., 2005; compiled by EDAW 2005

IMPACT ANALYSIS

Land Use and Planning

The proposed project includes amendments to the Raley's Landing Development Agreement and PD-30 text. These amendments would not be required under the No-Project (Existing Plans) Alternative because this alternative involves developing the project site in strict accordance with the pertinent planning documents, including the development agreement and PD-30 text. No significant land use impacts were identified for the proposed project, so no significant impact would be reduced or avoided by implementing this alternative. However, implementing the proposed project would involve amendments that would not be required under this alternative, so the impact under the No-Project (Existing Plans) Alternative would be slightly less than that under the proposed project with respect to land use. *[Lesser]*

Population, Employment, and Housing

Implementing the proposed project would not generate new residents associated with construction activities, but the population would increase by approximately 2,026 persons with construction of up to 900 multifamily residential units. In addition, at buildout, the project would generate approximately 3,253 jobs. By comparison, implementing the No-Project (Existing Plans) Alternative would generate approximately 1,262 residents and 3,900–4,200 jobs. No significant impacts related to population, employment, and housing were identified for the proposed project, so implementing the No-Project (Existing Plans) Alternative would not reduce or avoid any significant impacts associated with the project. Implementing the No-Project (Existing Plans) Alternative would result in a somewhat greater imbalance between jobs and housing than the proposed project (i.e., more jobs relative to employable residents). However, for the same reasons described for the proposed project in Section 3.2, "Population, Employment, and Housing," this impact also would be considered less than significant for the No-Project (Existing Plans) Alternative. Thus, impacts for this alternative would be similar to those for the project with respect to population, employment, and housing. *[Similar]*

Transportation and Circulation

The proposed project would generate 1,941 a.m. and 2,084 p.m. peak-hour trips and would significantly affect various intersections and roadways (see Section 3.3). After mitigation, significant and unavoidable impacts would still occur at the Third Street/Tower Bridge Gateway, Third Street/J Street, and I Street/Jibboom Street intersections and along segments of U.S. 50 and I-5. In addition, a significant and unavoidable impact could occur at the Jefferson Boulevard/Sacramento Avenue intersection if the improvements are not made before vehicle trips generated by the proposed project contribute to degradation of the level of service at the intersection to an unacceptable level. Although the No-Project (Existing Plans) Alternative would involve new development similar to that proposed for the project, the increased density and different mix of development associated with this alternative (i.e., greater commercial, office, and hotel development) would be expected to generate more vehicle trips than the proposed project. Although it is not clear whether these additional vehicle trips would result in additional intersections, roadway segments, or highway facilities operating at an unacceptable level of service, it is expected that implementing this alternative would result in greater transportation and circulation impacts compared with the proposed project. *[Greater]*

Air Quality

A total of 19,275 daily vehicle trips would be generated by the proposed project, which, along with stationary sources, would produce substantial emissions (see Section 3.4). The proposed project also would include new construction and operational activities, resulting in significant and potentially significant impacts before mitigation related to short-term construction-generated emissions, long-term operational project-generated emissions, and increases in stationary and mobile-source TACs. After mitigation, residual significant air quality impacts would remain related to short-term construction and long-term operation emissions. The project also would have a less-than-significant impact related to increases in local mobile-source CO concentrations. The No-Project (Existing Plans) Alternative would involve new development similar to that proposed for the project and thus would generate new construction and stationary-source air emissions similar to those of the proposed project. As described above in the discussion of transportation and circulation, because of the increased density and different mix of development associated with this alternative, it is expected to generate more vehicle trips than the proposed project. These additional vehicle trips would result in increased mobile-source emissions; therefore, implementing this alternative would result in greater air quality impacts. *[Greater]*

Noise

Implementing the proposed project would result in significant or potentially significant impacts related to short-term noise generated by construction activities, exposure to groundborne vibration during construction, increases in stationary- and area-source noise, increases in operational traffic noise, and land use compatibility with on-site noise levels. After mitigation, residual significant noise impacts would remain related to short-term construction noise and incompatibility with on-site noise levels. Under the No-Project (Existing Plans) Alternative, new construction activities and land uses would be similar to those under the proposed project, so construction noise, new noise-generating land uses, and new sensitive noise receptors would be similar for both this alternative and the proposed project. Therefore, for these impact mechanisms, there would be a similar increase in potential noise conflicts under this alternative. Although the No-Project (Existing Plans) Alternative is expected to generate more vehicle trips than the proposed project (see discussion of transportation and circulation above), these additional trips are not considered sufficient to alter the significance of traffic-generated noise impacts. Implementation of the No-Project (Existing Plans) Alternative would not reduce or avoid significant and unavoidable noise impacts associated with the proposed project or result in new significant noise impacts; therefore, this alternative would result in similar noise impacts than the proposed project. *[Similar]*

Public Services

Up to 900 multifamily residential dwelling units (and a substantial amount of office and commercial development) would be constructed under the proposed project, which would create significant demand for fire, police, and park services and facilities. Increased demand for public school facilities and services was not considered significant for the proposed project because elementary, middle, and high schools in the project area have sufficient available capacity to meet the demand associated with the proposed project. The significant public services impacts associated with the proposed project would be reduced to less-than-significant levels through implementation of recommended mitigation measures. The No-Project (Existing Plans) Alternative would include new development similar to that of the proposed project (561 multifamily residential dwelling units and office and commercial development somewhat greater than that proposed for the project although with up to 339 fewer housing units); therefore, implementing this alternative could result in a smaller increase in demand for fire protection, police service, public schools, and parks relative to the proposed project. The impact related to public school facilities and services would be less than significant under this alternative also. As with the proposed project, the significant impacts would be reduced to less than significant with mitigation. Because neither the proposed project nor the No-Project (Existing Plans) Alternative would result in any significant public services impacts after mitigation, the impact on public services would be similar for the two scenarios although potentially slightly smaller for the No-Project (Existing Plans) Alternative. *[Similar]*

Public Utilities

Development of the proposed project would result in a significant impact related to increasing the demand for wastewater treatment facilities. The project would contribute to the need to expand the Sacramento Regional Wastewater Treatment Plant (SRWTP), construction of which would result in a significant and unavoidable air quality impact from short-term increases in NO_x during construction. Several utility impacts would be less than significant before mitigation under the proposed project: demand for water supply and treatment capacity, demand for water conveyance and storage, demand for wastewater conveyance facilities, generation of solid waste, demand for electricity and required extension of electrical infrastructure, and demand for natural gas and required extension of natural gas infrastructure. The No-Project (Existing Plans) Alternative would include new development that would generate similar utility demand compared with the proposed project; therefore, implementing this alternative would similarly create significant demand for wastewater treatment facilities and would generate additional demand related to water supply and treatment, water conveyance and storage, wastewater conveyance facilities, generation of solid waste, electricity and extension of infrastructure, and natural gas and extension of infrastructure. As with the proposed project, the significant and unavoidable impact related to wastewater treatment facilities could not be avoided with mitigation, and the remaining impacts would be less than significant before mitigation. Therefore, impacts related to public utilities associated with this alternative would be similar to those under the proposed project. *[Similar]*

Geology and Soils

Implementing the proposed project would result in potentially significant risks to people and structures caused by strong seismic ground shaking, seismic-related ground failure, and unstable soil conditions and the potentially significant risk of structural damage caused by corrosive soils. However, all impacts would be reduced to less-than-significant levels with mitigation. The impact of construction-related erosion hazards would be less than significant without mitigation. The No-Project (Existing Plans) Alternative would include new construction activities similar to those of the proposed project; therefore, the potential increase in risks associated with a seismic event, construction-related erosion, unstable soil conditions, or corrosive soils would be similar for both scenarios. Implementing the proposed project and the No-Project (Existing Plans) Alternative would not result in any significant impacts related to geology and soils after mitigation; therefore, this alternative would have impacts similar to those of the proposed project. *[Similar]*

Hazards and Hazardous Materials

Implementing the proposed project could result in the significant exposure of construction workers, residents, and others to hazardous materials at existing contaminated areas that could be disturbed during construction activities. However, this impact would be less than significant after mitigation. The potential use of hazardous materials during project construction and in project retail areas (e.g., at dry cleaners, photo processors) would be a less-than-significant impact even without mitigation because the increased storage, use, and transport of hazardous materials during the construction and operation of project facilities would comply with local, state, and federal regulations. The No-Project (Existing Plans) Alternative would include development similar to that under the proposed project; therefore, construction workers, residents, and others would have a risk of exposure to hazardous materials similar to that under the proposed project. The same mitigation measures identified for the proposed project also would reduce significant impacts to less than significant under the No-Project (Existing Plans) Alternative. Because no significant impacts related to hazards and hazardous materials were identified for the proposed project after mitigation, implementing the No-Project (Existing Plans) Alternative would not reduce or avoid any significant impacts related to this environmental issue. Impacts are considered similar to those associated with the proposed project. *[Similar]*

Hydrology and Water Quality

Implementing the proposed project would result in a significant increase in stormwater drainage and localized runoff, potentially causing localized flooding; potential for short-term construction-related soil erosion and water quality impairment; and potential long-term degradation of water quality. Mitigation measures identified in this EIR would reduce these impacts to a less-than-significant level. The No-Project (Existing Plans) Alternative would involve construction and land uses similar to that of the proposed project; therefore, there also would be a potential increase in localized flooding, construction-related releases of sediment and contaminants into surface waters, and long-term degradation of water quality under this alternative. The same mitigation measures identified for the proposed project also would reduce these impacts to less than significant under the No-Project (Existing Plans) Alternative. Because implementing the proposed project would not result in any significant impacts related to hydrology and water quality after mitigation, implementing the No-Project (Existing Plans) Alternative would not reduce or avoid any significant impacts related to this environmental issue. Impacts are considered similar to those associated with the proposed project. *[Similar]*

Biological Resources

The proposed project involves developing the site with urban uses, resulting in significant impacts on valley elderberry longhorn beetle, active Swainson's hawk nests, active raptor nests, remnant riparian habitat, and protected trees. These impacts would be reduced to less-than-significant levels with mitigation identified in this DEIR. The No-Project (Existing Plans) Alternative would involve similar development on the project site and thus would result in similar impacts on existing on-site sensitive species and habitat, and the same mitigation measures would reduce these impacts to a less-than-significant level. *[Similar]*

Visual Resources

Implementation of the proposed project would result in significant impacts from lighting and shadow and could result in what may be perceived as a significant degradation of the site's visual character. New sources of nighttime light and glare would be created, but mitigation has been identified that would reduce this impact to less than significant. The cost to implement a redesign of the Washington Street property development that would substantially reduce the shadow impact on residences immediately north of the property would make this portion of the proposed project economically infeasible; therefore, this shadow impact is considered significant and unavoidable. The impact on visual character is considered significant and unavoidable, although this topic is highly subjective. The impacts relating to a scenic vista and damage to scenic resources within a state scenic highway would be less than significant without mitigation. Under the No-Project (Existing Plans) Alternative, similar new development would occur. The less-than-significant impacts identified for the proposed project also would be less than significant under this alternative and the significant light and glare impact would similarly be reduced to less than significant with mitigation. Because the extent and height of development under this alternative would be similar to what is considered under the proposed project, the shadow impact would not be avoided. In addition, the impact relating to degradation of the site's visual character would not be avoided under this alternative. Impacts are considered similar to those associated with the proposed project. *[Similar]*

Cultural Resources

Under the proposed project, ground disturbance and development of new structures would occur, resulting in significant or potentially significant impacts related to destruction of or damage to known cultural resources, destruction of or damage to as-yet-undiscovered archaeological resources, and discovery of human remains. These impacts would be reduced to less-than-significant levels after mitigation. The impact of destruction of or damage to identified National Register of Historic Places properties would be less than significant without mitigation. The No-Project (Existing Plans) Alternative would require construction activities similar to those of the proposed project. Because this alternative involves development and ground disturbance similar to those of the proposed project, its impact on cultural resources also would be similar to those of the project, and the same mitigation measures would reduce significant impacts to less-than-significant levels. *[Similar]*

IMPACT SUMMARY

Implementing the No-Project (Existing Plans) Alternative would result in impacts greater than the proposed project in two environmental issue areas, impacts lesser than those of the proposed project in one environmental issue area, and impacts similar to those of the proposed project in 10 issue areas. Significant and unavoidable impacts related to traffic, air quality, noise, and visual resources associated with the proposed project also would occur under this alternative.

4.3.3 REDUCED DEVELOPMENT ALTERNATIVE

The Reduced Development Alternative assumes that 50% of the office and commercial uses, including the hotel, and 75% of the residential uses proposed under the project would be constructed. The footprint of the project would not be altered under this alternative; rather, the building heights would be reduced to reflect the percent reduction in the extent of these uses. Table 4-3 presents a comparison of the total estimated development under this alternative with the development that could occur under the proposed project. The reductions in building height are intended to reduce significant visual impacts associated with the proposed project, and the reduced development density is intended to reduce significant traffic impacts.

The Reduced Development Alternative involves development of a mixed-use development of residential, commercial, and office uses; therefore it is generally consistent with project objectives, although to a lesser degree than the proposed project. Because of the reduced scale of this alternative, it may not meet the objectives of providing a modern, technologically efficient office facility suitable for the needs of a major financial institution or other large institutional office user or providing a prudent investment for the project's developer/owner, balancing initial and long-term costs.

Table 4-3
Summary Comparison of Development under the Reduced Development Alternative and the Proposed Project

Land Use Type	Reduced Development Alternative	Proposed Project Development Potential
Office	422,500 gross square feet	845,000 gross square feet
Commercial	51,000 gross square feet	102,000 gross square feet
Residential	675 multifamily units (638 if hotel is built)	900 multifamily units (850 if hotel built)
Hotel and conference room	150 rooms (and 7,500 square feet for conference room)	300 rooms (and 15,000 square feet for conference room)

Source: Compiled by EDAW 2005

IMPACT ANALYSIS

Land Use and Planning

The Reduced Density Alternative, like the proposed project, would require amendments to the Raley's Landing Development Agreement and PD-30 text. Some of the same amendments would be required for both scenarios (e.g, incorporation of the Washington Street property into the development agreement and PD-30 text, abandonment of Second Street between E and F Streets); however, most of the amendments required for the proposed project relate to increasing the density and height of development on the project site, and these would not be necessary under the Reduced Development Alternative. Implementing the proposed project would not result in any significant land use impacts. Because this alternative has the same land uses on the project site, implementing the Reduced Density Alternative also would not result in any significant land use impacts. Therefore, land use impacts would be similar for the proposed project and for this alternative. *[Similar]*

Population, Employment, and Housing

Implementing the Reduced Development Alternative would result in 25% less population growth than proposed under the project. Under this alternative, population would increase by approximately 1,519 persons with construction of up to 675 multifamily residential units. In addition, at buildout, the project would generate approximately 1,627 jobs (half the number of jobs proposed for the project because the amount of commercial and office development is reduced by half). The jobs/housing index (see Section 3.2, “Population, Employment, and Housing”) would be higher under this alternative (0.64) than for the proposed project (0.40) and therefore would be closer to balanced (a jobs/housing index of 1.0 is considered balanced). No significant impacts related to population, employment, and housing were identified for the proposed project, so implementing the Reduced Development Alternative would not reduce or avoid any significant impacts associated with the project. However, it would be marginally better than the proposed project with respect to the project’s jobs/housing balance. *[Lesser]*

Transportation and Circulation

The Reduced Development Alternative would involve new development and thus would generate traffic-related impacts. The proposed project would generate 1,941 a.m. and 2,084 p.m. peak-hour trips and would significantly affect various intersections and roadways in West Sacramento and Sacramento (see Section 3.3). After mitigation, significant and unavoidable impacts would still occur at the Third Street/Tower Bridge Gateway, Third Street/J Street, and I Street/Jibboom Street intersections and along segments of U.S. 50 and I-5. In addition, a significant and unavoidable impact could occur at the Jefferson Boulevard/Sacramento Avenue intersection if the improvements are not made before vehicle trips generated by the proposed project contribute to degradation of the level of service at the intersection to an unacceptable level. Implementation of the Reduced Development Alternative, which would involve 50% of the commercial and office development and 75% of the residential development associated with the proposed project, would substantially reduce the project’s contribution to these impacts. However, cumulative development beyond the project site results in unacceptable levels of service at these intersections and freeway segments without the proposed project, and the Reduced Development Alternative would still make a substantial contribution to the significant and unavoidable impacts in these locations. *[Lesser]*

Air Quality

Both the Reduced Development Alternative and the proposed project would involve new development and the generation of new construction and operations-related air emissions. Overall air emissions would be less under the Reduced Development Alternative because of the reduced development, project population, and number of vehicle trips. It is estimated that the reduction in development size would reduce air emissions (construction, traffic, stationary source) by approximately 20–40% compared with the proposed project. The less-than-significant air quality impact related to local mobile-source CO emissions would be reduced under this alternative. The same is true for the potentially significant impact related to the exposure of sensitive receptors to mobile-source TACs, which would be reduced to less than significant after mitigation under both scenarios.

The significant impacts related to short-term construction emissions and long-term project-related emissions would be considered significant and unavoidable under both scenarios. A total of 19,275 daily vehicle trips would be generated by the proposed project, which, along with stationary sources, would produce substantial emissions (see Section 3.4). Implementation of the Reduced Development Alternative, which would involve 50% of the commercial and office development and 75% of the residential development, would reduce these significant and unavoidable air quality impacts (summer NO_X emissions and winter PM_{10} emissions might be reduced to levels below the threshold) but would not avoid the significant and unavoidable air quality impacts; therefore, implementing this alternative would result in lesser air quality impacts than the proposed project, although cumulative development outside the project site also would result in many of these impacts. Although significant and unavoidable air quality impacts would still occur under this alternative, overall emissions would be lesser than under the proposed project; therefore, overall impacts are considered to be lesser. *[Lesser]*

Noise

As with the proposed project, implementing the Reduced Development Alternative would result in temporary noise generated by construction activities, development of various noise-generating land uses, increases in traffic noise, and development of sensitive receptors that would be exposed to existing or project-generated noise levels that exceed City standards. Despite the estimated 20–40% reduction in vehicle trips under the Reduced Density

Alternative relative to the proposed project, traffic noise is expected to continue to be substantial. After mitigation, under both scenarios, residual significant noise impacts would remain related to incompatibility between some proposed project land uses and projected on-site exterior noise levels. This impact would be less under the Reduced Development Alternative because with a 25% reduction in residential development, there would be fewer sensitive receptors overall. However, exterior noise conflicts would still occur related to other noise sources. Although the Reduced Development Alternative would not avoid this significant and unavoidable impact, it would reduce the effects relative to the proposed project. *[Similar]*

Public Services

Implementing the proposed project would result in significant public services impacts related to demand for fire, police, and park services and facilities. These impacts would be reduced to less-than-significant levels after mitigation. Increased demand for public school facilities and services was not considered significant for the proposed project because elementary, middle, and high schools in the project area have sufficient available capacity to meet the demand associated with the proposed project. These same impacts would occur under the Reduced Development Alternative but to a lesser degree because of the reduced population and residential development associated with the alternative. However, impacts would still remain significant before mitigation because new facilities and services would be required to meet project demand. Although this alternative would not reduce or avoid any significant impacts to public services, impacts are still considered less relative to the proposed project because of the reduced demand. *[Lesser]*

Public Utilities

Development of the proposed project would result in a significant impact related to increasing the demand for wastewater treatment facilities. The project would contribute to the need to expand the SRWTP, construction of which would result in a significant and unavoidable air quality impact from short-term increases in NO_x during construction. Several utility impacts would be less than significant before mitigation: demand for water supply and treatment capacity, demand for water conveyance and storage, demand for wastewater conveyance facilities, generation of solid waste, demand for electricity and required extension of electrical infrastructure, and demand for natural gas and required extension of natural gas infrastructure. Implementing the Reduced Development Alternative would result in the same utility impacts described above although to a lesser degree because of the reduction in development associated with this alternative. Overall utility impacts associated with this alternative are considered less than for the proposed project. *[Lesser]*

Geology and Soils

Implementing the proposed project would result in potentially significant risks to people and structures caused by strong seismic ground shaking, seismic-related ground failure, and unstable soil conditions and the potentially significant risk of structural damage caused by corrosive soils. However, all impacts would be reduced to less-than-significant levels with mitigation. The impact of construction-related erosion hazards would be less than significant without mitigation. Although there would be a reduction in project development under the Reduced Development Alternative, the footprint of the project would be the same under both scenarios, so the amount of ground disturbance would be the same for both; therefore, impacts related to construction erosion and risks from seismic and soil hazards would be similar, and the same mitigation measures would apply. *[Similar]*

Hazards and Hazardous Materials

Implementing the proposed project could result in the significant exposure of construction workers, residents, and others to hazardous materials at existing contaminated areas that could be disturbed during construction activities. However, this impact would be less than significant after mitigation. The use of hazardous materials (e.g., during construction, if retail areas include dry cleaners, photo processors) would be a less-than-significant impact even without mitigation because the increased storage, use, and transport of hazardous materials during the construction and operation of project facilities would comply with local, state, and federal regulations. These same impacts would occur under the Reduced Development Alternative, although to a lesser degree because of the reduced development and population size. *[Lesser]*

Hydrology and Water Quality

Implementing the proposed project would result in a significant increase in stormwater drainage and localized runoff, potentially causing localized flooding; potential for short-term construction-related soil erosion and water quality impairment; and potential long-term degradation of water quality. Mitigation measures identified in this EIR would reduce these impacts to a less-than-significant level. Although there would be less development under the Reduced Development Alternative, the footprint for both scenarios would be the same, so the same surface area would be developed; therefore, the impacts identified for the proposed project also would occur under this alternative, and the same mitigation measures would apply. *[Similar]*

Biological Resources

The proposed project involves developing the site with urban uses, resulting in significant impacts on valley elderberry longhorn beetle, active Swainson's hawk nests, active raptor nests, remnant riparian habitat, and protected trees. These impacts would be reduced to less-than-significant levels with mitigation identified in this DEIR. Although the Reduced Development Alternative would not include all the development proposed for the project site under the proposed project, the footprint of both scenarios would be the same, and the significant biological resources impacts would be the same for both the proposed project and the Reduced Development Alternative. The same mitigation measures would apply to both scenarios. *[Similar]*

Visual Resources

Implementation of the proposed project would result in significant impacts from lighting and shadow and could result in what may be perceived as a significant degradation of the site's visual character. New sources of nighttime light and glare would be created, but mitigation has been identified that would reduce this impact to less than significant. The shadow impact would be greatest on the residences immediately north of the Washington Street property, and this impact could be mitigated to a less-than-significant level only by implementing a redesign of the development. Because implementing such a redesign would make this portion of the project economically infeasible, this impact is considered significant and unavoidable. The impact on visual character is considered significant and unavoidable, although this topic is highly subjective. The impacts relating to a scenic vista and damage to scenic resources within a state scenic highway would be less than significant without mitigation.

The same impacts would occur under the Reduced Development Alternative, but they would be reduced. Under this alternative, the light and glare impact and shadow impact would be lessened and the visual character would be less dramatically altered because the buildings associated with development would be shorter to reflect the 50% reduction in office and commercial development and the 25% reduction in residential development. Under this alternative, the Ziggurat, at 158 feet, would remain the tallest building in the area. The two tower portions of the building in the River 3 area, which would be up to 300 and 180 feet tall under the proposed project, would be reduced to approximately 150 and 90 feet tall under the Reduced Density Alternative. The residential tower on the River 2 area, which would be up to approximately 190 feet tall under the proposed project, would be reduced to approximately 143 feet tall. The office building on the River 1 area, the tallest of the three on that property, would be reduced from approximately 245 to 123 feet tall. The next tallest building on the River 1 area, which would serve as either an apartment/condominium tower or a hotel and conference center, would be reduced from approximately 145 feet tall under the proposed project to either approximately 109 or 73 feet tall, depending on whether it was developed as residential or hotel use. The shortest building on River 1, which would serve as an apartment/condominium complex, would be reduced from approximately 72 to 54 feet tall. The reduction would be the least on the Washington Street property because the buildings are the shortest proposed for the project (approximately 65 feet tall, reduced to 45–50 feet tall). Some of these buildings would be live-work units; the reduction in height to these mixed-use buildings is uncertain.

Overall, the visual resource impacts would be reduced under the Reduced Development Alternative. With the height and extent of development reduced under this alternative, the length and extent of shadows also would be reduced. However, the residences immediately north of the Washington Street property would still be affected by shadows generated by the proposed project during a substantial portion of the day. This circumstance would occur for fewer days during the year relative to the proposed project. The only option for reducing the shadow impact to a less-than-significant level would require implementing a redesign of the development. Because the cost to implement the redesign would make this portion of the proposed project economically infeasible, this shadow impact is considered significant and unavoidable under the Reduced Density Alternative.

With the shorter buildings, there would be less of an alteration to the visual character of the project site, and with the Ziggurat remaining as the tallest structure in the vicinity, it would fully screen views of some project structures from some vantage points. However, similar to the analysis of visual impacts in Section 3.12, "Visual Resources," implementation of the Reduced Development Alterative would still result in a substantial alteration to the visual character of the project site, which reasonable people might consider a substantial degradation of the visual character. This perceived degradation of the visual character could not be mitigated to a less-than-significant level. Therefore, the impact on the site's visual character under the Reduced Density Alternative would still be considered significant and unavoidable. *[Lesser]*

Cultural Resources

Under the proposed project, ground disturbance and development of new structures would occur, resulting in significant or potentially significant impacts related to destruction of or damage to known cultural resources, destruction of or damage to as-yet-undiscovered archaeological resources, and discovery of human remains. These impacts would be reduced to less-than-significant levels after mitigation. The impact of destruction of or damage to identified National Register of Historic Places properties would be less than significant without mitigation. Although the Reduced Development Alternative involves substantially less development than the proposed project, both scenarios would occupy the same footprint; therefore, the extent of ground disturbance, and the resulting impact on cultural resources, would be similar for both the proposed project and the Reduced Development Alternative. The same mitigation measures would reduce significant impacts to less-than-significant levels *[Similar]*

IMPACT SUMMARY

Implementing the Reduced Development Alternative would result in impacts similar to those of the proposed project in six environmental issue areas and lesser impacts in seven. Significant and unavoidable impacts related to transportation and circulation, air quality, noise, and aesthetic resources associated with the proposed project also would occur under this alternative.

4.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The State CEQA Guidelines require identification of an environmentally superior alternative. If the No-Project Alternative is determined to be environmentally superior, CEQA requires selection of the environmentally superior alternative other than the No-Project Alternative from among the proposed project and the alternatives evaluated.

Table 4-4 identifies whether each of the three alternatives would have greater, lesser, or similar impacts compared with the proposed project for each of the 13 environmental issue areas evaluated in this EIR. The No-Project (No-Development) Alternative would have greater impacts than the proposed project in no issue area, lesser impacts in 10, and similar impacts in three. The No-Project (Existing Plans) Alternative would have greater impacts than the proposed project in two issue areas, lesser impacts in one, and similar impacts in 10. The Reduced Development

Alternative would have greater impacts than the proposed project in no issue areas, lesser impacts in seven, and similar impacts in six.

Table 4-4
Comparison of the Impacts of the Proposed Project with Those of the Alternatives

Environmental Issue Area	Alternatives		
	No Project (No Development)	No Project (Existing Plans)	Reduced Development
Land use and planning	Similar	Lesser	Similar
Population, employment, and housing	Similar	Similar	Lesser
Transportation and circulation	Lesser	Greater	Lesser
Air quality	Lesser	Greater	Lesser
Noise	Lesser	Similar	Similar
Public services	Lesser	Similar	Lesser
Public utilities	Lesser	Similar	Lesser
Geology and soils	Similar	Similar	Similar
Hazards and hazardous materials	Lesser	Similar	Lesser
Hydrology and water quality	Lesser	Similar	Similar
Biological resources	Lesser	Similar	Similar
Visual resources	Lesser	Similar	Lesser
Cultural resources	Lesser	Similar	Similar
Totals			
Greater Impacts	0	2	0
Lesser Impacts	10	1	7
Similar Impacts	3	10	6

Note: For each environmental issue, the alternative is compared with the proposed project based on the level of severity of impacts (greater, similar, lesser).
Source: Compiled by EDAW 2005

Based solely on the listing of lesser and greater impacts as identified in Table 4-4, the No Project (No-Development) Alternative would appear to be the environmentally superior alternative. However, the table alone does not provide sufficient information to make such a finding.

Implementing the proposed project would result in significant and unavoidable adverse impacts in four areas: transportation and circulation, air quality, noise, and visual resources. Implementing the No-Project (No-Development) Alternative, by comparison, would not result in any significant and unavoidable impacts. Because implementing the No-Project (No-Development) Alternative would not result in any significant and unavoidable impacts, this alternative is the environmentally superior alternative.

Implementing the No-Project (Existing Plans) Alternative would not reduce any of the significant and unavoidable impacts of the proposed project. It would have greater impacts than the proposed project with respect to transportation and circulation and air quality. The only environmental issue area in which this alternative would have a lesser impact would be land use and planning, and that impact relates to plan consistency; not to physical impacts on the environment.

Implementing the Reduced Development Alternative would reduce, but not to a less-than-significant level, each of the proposed project's unavoidable impacts. This alternative would still contribute to the identified significant and unavoidable impacts, but because substantially less development would occur under this alternative, its contributions would be substantially less than what would occur with the proposed project.

Implementing the No-Project (No-Development) Alternative would have the least impact on the environment; however, as stated previously, CEQA requires selection of an environmentally superior alternative other than the No-Project Alternative. For this reason, the Reduced Development Alternative is the environmentally superior alternative among the alternatives that may partially meet the objectives of the proposed project.

5 CUMULATIVE IMPACTS

5.1 INTRODUCTION TO THE CUMULATIVE ANALYSIS

This DEIR provides an analysis of overall cumulative impacts of the proposed Raley's Landing project taken together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the California Environmental Quality Act Guidelines (State CEQA Guidelines). The goal of such an exercise is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant; and second, to determine whether the proposed project itself would cause a "cumulatively considerable" (and thus significant) incremental contribution to any such cumulatively significant impacts. (See State CEQA Guidelines Section 15130[a]–[b], Section 15355[b], Section 15064[h], Section 15065[c]; *Communities for a Better Environment v. California Resources Agency* [2002] 103 Cal.App.4th 98, 120). In other words, the required analysis intends to first create a broad context in which to assess the project's incremental contribution to anticipated cumulative impacts, viewed on a geographic scale well beyond the project site itself, and then to determine whether the project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable").

Cumulative impacts are defined in State CEQA Guidelines Section 15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (State CEQA Guidelines Section 15355[b]).

Consistent with State CEQA Guidelines Section 15130, the discussion of cumulative impacts in this DEIR focuses on significant and potentially significant cumulative impacts. Section 15130(b) of the State CEQA Guidelines, in part, provides the following:

> The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

The proposed project is considered to have a significant cumulative effect if:

- the cumulative effects of development without the project are not significant and the project's additional impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or

- the cumulative effects of development without the project are already significant and the project contributes measurably to the effect. The term "measurably" is subject to interpretation. The standards used herein to determine measurability are that the impact must be noticeable to a reasonable person, or must exceed an established threshold of significance.

5.2 PROJECT CONTRIBUTING TO POTENTIAL CUMULATIVE IMPACTS

The State CEQA Guidelines identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and probable future projects or the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document. For this DEIR, both the list and the plan approach have been combined to generate the most reliable future projections possible. A list approach is used to define the local project environment and includes projects in the City of West Sacramento and projects in the City of Sacramento in the Downtown and Richards Boulevard Project Areas. Because the project is relatively large and would directly influence, and would be influenced by, regional development activities, the plan approach is also used, to allow a cumulative analysis on a regional scale. Projects and plans included in these two approaches are described below.

5.2.1 CUMULATIVE CONTEXT

In the modern era, the West Sacramento area experienced its most dramatic growth during the 1950s, as the population more than doubled from 11,906 in 1950 to 25,032 in 1960, averaging an annual growth rate of 11.0%. The area's population rose to almost 27,400 in 1970, and then declined to approximately 24,000 by 1975. It took until 1988, when the population reached 27,540, for the area to again reach its 1970 population. During the 1980s, West Sacramento's population growth has lagged behind other parts of the Sacramento metropolitan area, which covers El Dorado, Placer, Sacramento, and Yolo Counties. Between 1980 and 1989, the city's population grew by a total of 12%. During the same period, the population of the metropolitan area increased by 23.3%, with Yolo County's total population increasing by 17.7%, Sacramento County's by 22.8%, and the City of Sacramento's by 32.9% (City of West Sacramento2004).

According to U.S. Census records, the population in West Sacramento grew from 28,898 in 1990 to more than 31,000 in 2000. The current population as of January 1, 2005 is estimated to be 40,206 (California Department of Finance 2005). Yolo County (County) has grown moderately in recent years, from 141,092 in 1990 to 168,660 in 2000. West Sacramento accounted for 18% of the total Yolo County population in 2000, although this is a decrease from 20% in 1990. Similar increases in population have occurred in the Sacramento metropolitan area and Sacramento County. During the 10-year period from 1990 to 2000, the population of the City of Sacramento increased from 369,365 to 407,018 (U.S. Census Bureau2002). The current population as of January 1, 2005, is estimated to be 452,959 (California Department of Finance 2005). Sacramento County has grown from 1,041,219 in 1990 to 1,223,499 in 2000 (U.S. Census Bureau2002). The City of Sacramento accounted for 33% of the total Sacramento County population in 2000, which is a slight decrease from 35% in 1990. Yolo and Sacramento Counties, the cities within the counties, and the Sacramento metropolitan area as a whole are facing numerous regional issues pertaining to air quality degradation, traffic generation, biological habitat loss, loss of farmland, and other urban related environmental changes.

5.2.2 LIST OF RELATED PROJECTS

The list of past, present, and probable future projects used for this cumulative analysis is restricted to those projects that have occurred, are underway, or are planned to occur within the City of West Sacramento and the Downtown and Richards Boulevard Project Areas in the City of Sacramento (as defined above). For the purposes of this discussion, these projects that may have a cumulative effect on the resources in the project area will often be referred to as the "related projects." These related projects are identified in Exhibit 5-1 and Table 5-1. The analysis of cumulative environmental impacts associated with the proposed project addresses the potential incremental impacts of the proposed project in combination with these related projects The projects listed in Table 5-1 are not intended to be an all-inclusive list of projects in the region, but rather an identification of projects approved or planned in the Raley's Landing area or elsewhere in the cities of West Sacramento and Sacramento that have some relation to the proposed project and/or the setting conditions of the project. The project list focuses on residential, office, and mixed used projects that have the potential to interact on a cumulative basis with the Raley's Landing project.

5.2.3 REGIONAL PLANNING ENVIRONMENT

Because the proposed project is relatively large and would directly influence, and be influenced by, regional development activities, the plan approach is also used to evaluate cumulative impacts on a regional scale. The regional cumulative analysis area covers Yolo and Sacramento Counties and includes an evaluation of the following plans:

- *City of West Sacramento General Plan*, adopted in 1990 and as amended through December 8, 2004;
- *City of West Sacramento General Plan Background Report* (1990);
- City of West Sacramento Draft General Plan Update EIR (1987) and Final General Plan Update EIR (1990);
- *Yolo County General Plan* (including the Referenced EIR), adopted in 1983 and as amended through 2002;
- *City of Sacramento General Plan*, adopted in 1988 and as amended through 2002;
- Draft EIR, City of Sacramento General Plan Update (1988) and Final EIR, City of Sacramento General Plan Update (1988);
- *Sacramento County General Plan*, adopted in 1993 and as amended through March 2004
- Draft EIR, Sacramento General Plan Update (1990-2010) (1993)

Additional information on conditions in the regional analysis area was obtained from the Sacramento Area Council of Governments (SACOG).

The following summary provides the cumulative planning environment in Yolo and Sacramento Counties used for the regional cumulative impact analysis. Yolo County covers approximately 661,790 acres, with approximately 440,783 acres, or nearly 67% of the county, used or available for agriculture (row and field crops, orchards, vineyards, and grazing lands). According to the 2000 U.S. Census, Yolo County had a resident population of 168,660 as of April 2000. Population projections for the county are 236,110 in 2020 and 266,000 by 2025 (SACOG 2001). The gain in new residents would be approximately 97,300 by 2025, or a little over 37%. Based on County land use policies and zoning and Local Agency Formation Commission policies, it is evident that most of that population increase would occur in the cities, with limited growth in the unincorporated communities. According to information provided by SACOG, only 21 housing units were constructed in the Yolo County unincorporated area in 1999, compared to a total of 1,301 in the incorporated cities. However, approximately 450 parcels in the unincorporated area of Yolo County have been tentatively approved for development of single-family homes.

Sacramento County covers approximately 555,000 acres, with approximately 360,000 acres, or nearly 65% of the county, used or available for agriculture (row and field crops, orchards, vineyards, and grazing lands). According to the 2000 U.S. Census, Sacramento County had a resident population of 1,223,499 as of April 2000. Population projections for the county are 1,646,045 in 2020 and 1,695,498 by 2025 (SACOG 2001). The gain in new residents would be approximately 471,999 by 2025, or a little over 28%. Based on County land use policies and zoning and Local Agency Formation Commission policies, it is evident that most of that population increase would occur in the cities, with limited growth in the unincorporated communities. According to information provided by SACOG Regional Housing Needs Assessment (2001), 23,053 housing units were constructed in the Sacramento County unincorporated area in 1999, compared to a total of 32,614 in the incorporated cities. While SACOG anticipates only 12.4% growth in the Yolo County unincorporated area, growth in the Sacramento County unincorporated area is projected at over 56%. With such high rates of growth in the six-county region, increased pressure would be placed on Yolo County to maintain the comparatively low growth rate of 12.4% (Yolo County 2001).

5.3 ANALYSIS OF CUMULATIVE IMPACTS

The following sections contain a discussion of the cumulative effects anticipated from implementation of the proposed project, together with the related projects and regional development for each of the 13 environmental issue areas evaluated in this DEIR. The analysis conforms with Section 15130 of the State CEQA Guidelines, which specifies that the “discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great a detail as is provided of the effects attributable to the project alone.”

5.3.1 LAND USE AND PLANNING

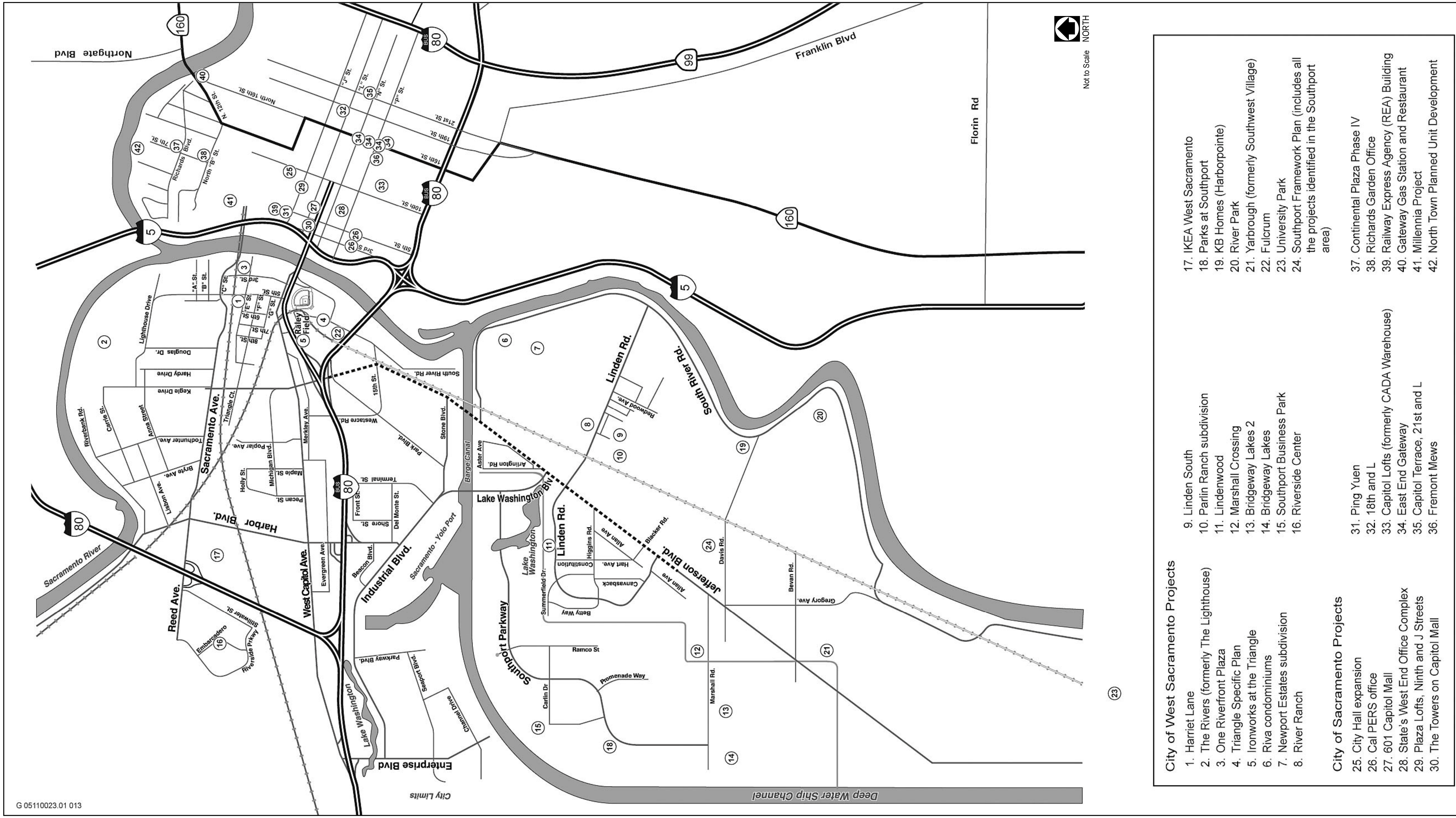
As described in Section 3.1, “Land Use and Planning,” of this DEIR, implementing the proposed project would not physically divide a community. It therefore also would not contribute to a cumulative impact regarding this issue. Impacts involving land use plans or policies and zoning generally would not combine to result in cumulative impacts. The determination of significance for impacts related to these issues, as considered in Appendix G of the State CEQA Guidelines, is whether a project would conflict with any applicable land use plan or policy adopted for the purpose of reducing or avoiding environmental impacts. Such a conflict is site specific and addressed on a project-by-project basis. As described in Section 3.1 of this DEIR, implementing the proposed project would not result in significant land use planning impacts, and the project’s ultimate consistency with local land use plans, policies, and zoning is ensured through proposed revisions to the Raley’s Landing Development Agreement. Because no land use impacts would occur on a project-specific basis, the project would not contribute to any potential cumulative land use impacts.

5.3.2 POPULATION, EMPLOYMENT, AND HOUSING

The proposed project is anticipated to contribute jobs in excess of the number of employable residents that would be expected to live on the project site. At full buildout, the Raley’s Landing project is anticipated to generate 3,253 jobs, and result in a jobs/housing balance of 0.40 at full buildout in 2011.

The jobs-housing index for Yolo County was 0.82 in 2000, and is projected to increase to 0.96 in 2010 and remain greater than 0.90 through 2025. Housing and employment in West Sacramento is currently close to balanced, with a jobs-housing index of 0.92 in 2000, and is projected to remain equal to or greater than 0.90 through 2025. At a regional level, the jobs-housing index for Sacramento County was 0.97 in 2000, and is projected to remain greater than 0.95 through 2025. For the City of Sacramento, the jobs-housing index in 2000 was 1.04, and would decrease to 0.96 by 2025. These jobs-housing indices indicate that the city and county are projected to remain relatively constant, the ratio of jobs to employed residents was nearly equal, and the jobs-housing index would become more balanced as development of the proposed project and related projects continues in the region. Therefore, the Raley’s Landing project would not cumulatively affect the city or county jobs-housing balance because the project is consistent with planning documents on which these jobs-housing calculations were based.

Population growth, by itself, is not considered a significant cumulative effect because it is not an environmental impact. However, population growth, and related housing and infrastructure, does lead to conversion of land to other uses, the impacts of which are considered in the applicable sections of this document.



Source: EDAW 2005

Related Projects **Exhibit 5-1**

Table 5-1
Projects, Planned or under Construction, Considered in the Cumulative Analysis

Number on Exhibit 5-1	Project Name	Status	Acreage	Proposed/Existing Use: Residences	Proposed/Existing Use: Industrial SF	Proposed/Existing Use: Commercial/Office SF
City of West Sacramento Projects						
1	Harriet Lane	Under construction	1.5	34 townhouses		
2	The Rivers (formerly The Lighthouse)	Under construction	250	1,139 single-family and multifamily units		
3	One Riverfront Plaza	Proposed	7.24	170 apartment units		530,000 sf of office, 50,000 sf of retail and restaurants
4	Triangle Specific Plan	Partially developed	180	Up to 5,000 high-density residential units		Up to 7,000,000 sf of office and commercial
5	Ironworks at the Triangle	Under construction	16	180 single-family units, 16 apartments		
6	Riva condominiums	Under construction	16.4	282 units		
7	Newport Estates subdivision	Under construction	270	866 single-family units		
8	River Ranch	Under construction	27	176 single-family units		
9	Linden South	Approved	18.5	85 single-family units		
10	Parlin Ranch subdivision	Under construction	76	312 single-family units		
11	Lindenwood	Under construction	17	176 units		
12	Marshall Crossing	Approved	20	37 single-family units		
13	Bridgeway Lakes 2	Approved	125	487 single-family units		
14	Bridgeway Lakes	Under construction	217	610 single-family units		
15	Southport Business Park	Partially developed	670	More than 2,050 single-family and multifamily units	Water-related industrial area Heavy industrial area Light industrial area	12 acres of commercial
16	Riverside Center	Partially developed	60		114,000 sf existing Light Industrial	400,000 sf of existing Business Park 111,000 sf of flex space

Table 5-1
Projects, Planned or under Construction, Considered in the Cumulative Analysis

Number on Exhibit 5-1	Project Name	Status	Acreage	Proposed/Existing Use		
				Residences	Industrial SF	Commercial/Office SF
17	IKEA West Sacramento	Under construction	20			265,000 sf of commercial
18	Parks at Southport	Proposed	250	2,050 units		
19	KB Homes (Harborpointe)	Proposed		2,050 units		
20	River Park	Proposed	446	2,485 units	7.4 acres	
21	Yarbrough (formerly Southwest Village)	Proposed	710	3,000 units		Up to 150,000 sf of commercial
22	Fulcrum	Proposed	50	1,750 units		1,100,000 sf of office 20,000 sf of retail
23	University Park	Proposed	570 (outside of city boundary)	1,908 single-family units, 450 multifamily units		
24	Southport Framework Plan (includes many of the projects identified above)	Proposed	7,120	Approximately 9,000*		
City of Sacramento Projects						
25	City Hall expansion	Under construction				150,000 sf of office
26	Cal PERS office	Under construction	Approximately two city blocks	180 units		550,000 sf of office, approximately 20,000 sf of commercial
27	601 Capitol Mall	Planned	One city block			330,000 sf of office and 30,000 sf of retail during first phase; both uses may be increased during second phase
28	State's West End Office Complex	Proposed	2.5 city blocks			1.4 million sf of office, approximately 45,000 sf of retail
29	Plaza Lofts, Ninth and J Streets	Under construction	One city block	200–270 units		17,000 sf of retail
30	The Towers on Capitol Mall	Proposed	2.4	800 condominium units		85,000 sf of retail, 40,000-sf gym, 10,000-sf spa, 276 hotel rooms

Table 5-1
Projects, Planned or under Construction, Considered in the Cumulative Analysis

Number on Exhibit 5-1	Project Name	Status	Acreage	Proposed/Existing Use		
				Residences	Industrial SF	Commercial/Office SF
31	Ping Yuen	Under construction	One city block	82 apartments		1,200 sf or retail
32	18th and L	Under construction	One city block	176 apartments and live/work units		9,600 sf of retail
33	Capitol Lofts (formerly CADA Warehouse)	Planned	One city block	102 apartments and live/work units		
34	East End Gateway	Planned	2.5	200–250		Approximately 25,000 sf of retail
35	Capitol Terrace, 21st and L	Under construction	One city block	65 multifamily rental units		3,300 sf of retail
36	Fremont Mews	Planned	One city block	119 units		
37	Continental Plaza Phase IV	Under construction				830,000 sf of office
38	Richards Garden Office	Planned				NA
39	Railway Express Agency (REA) Building	Planned				11,000 sf of retail/restaurant, 11,000 sf of office/retail
40	Gateway Gas Station and Restaurant	Planned				NA
41	Millennia Project	Planned	238			NA
42	North Town Planned Unit Development	Planned	65	2,000		600,000 sf of office, 60,000 sf or retail

- These 9,000 residences are proposed beyond those already included in projects encompassed by the plan. The increases in the number of residential units would be addressed in amendments for individual projects under the plan.

Sources: City of West Sacramento, compiled by EDAW 2005

5.3.3 TRANSPORTATION AND CIRCULATION

Section 3.3, Transportation and Circulation, of this DEIR evaluates both project-specific and cumulative traffic impacts. Project-only impacts are addressed in the discussion of the Existing Plus Project scenario. Cumulative impacts are addressed in the Cumulative Plus Project scenario. The Cumulative Plus Project scenario is defined as buildout of the proposed project in combination with near buildout of the current City of West Sacramento General Plan in the City of West Sacramento, and Year 2025 SACOG Projected Population and Employment for all areas outside the City of West Sacramento. This scenario is forecasted using the City of West Sacramento travel demand model. In general, the City travel demand model is a refined version of the SACOG's regional travel demand model, adapted by the City for local planning purposes.

Summarizing from Section 3.3, significant cumulative impacts would occur at study area intersections, roadway segments, and state highway facilities under the Cumulative Plus Project scenario. For seven intersections and roadway segments in the City of West Sacramento significant cumulative impacts would be mitigated to less-than-significant levels through implementation of intersection and roadway improvements identified in Section 3.3. The Third Street/Tower Bridge Gateway intersection in the City of West Sacramento would operate at an unacceptable LOS under cumulative conditions, without the addition of traffic from the propose project; and traffic generated by the Raley's Landing project would add greater than 0.05 to the volume to capacity (V/C) ratio at this signalized intersection, indicating that the proposed project would make a substantial contribution to a significant cumulative impact. There are no available intersection improvements that would allow this intersection to operate at an acceptable level-of-service (LOS) under cumulative conditions or methods to reduce the project's contribution to this impact to a less-than-significant level. Therefore, this cumulative impact would be significant and unavoidable.

Four intersections in the City of Sacramento would operate below LOS standards under cumulative conditions. This is considered a significant cumulative impact. Traffic generated by the Raley's Landing Project would result in additional peak hour periods (a.m. peak or p.m. peak) experiencing unacceptable LOS at two of these intersections and would increase the peak period average vehicle delays by more than five seconds to all four intersections, indicating that the proposed project would make a substantial contribution to a significant cumulative impact. However, as discussed in Section 3.3, there is no mechanism for the proposed project, located in the City of West Sacramento, to assist in funding improvements at these City of Sacramento intersection; therefore, the proposed project cannot mitigate its contribution to the significant cumulative impacts at these intersections. These cumulative impacts are considered significant and unavoidable.

Five state highway weaving segments included in the traffic study area would operate at an unacceptable LOS level under the cumulative no project condition, and traffic added by the proposed project would exacerbate the unacceptable LOS conditions at these locations; indicating that the proposed project would make a substantial contribution to a significant cumulative impact. The City of West Sacramento has developed improvement plans for the Jefferson Boulevard/U.S. 50 interchange, and the South River Road/U.S. 50 interchange (City of West Sacramento 1993). The City has included the cost of these improvements in its traffic fee program and through payment of traffic impact fees the proposed project and related projects in the City of West Sacramento would provide fair share funding for these improvements. Implementation of these interchange projects would assist in improving traffic conditions on U.S. 50, but would not reduce the cumulative impacts identified above to less-than-significant levels.

For all freeway segments where the proposed project would make a substantial contribution to a significant cumulative impact, any facility improvements that would mitigate these effects are ultimately the responsibility of Caltrans. Development of needed improvements is outside the scope of any individual project (i.e., regional improvements) and cannot realistically be implemented by the project applicant(s) or project proponent(s) associated with any of the related projects. Although local jurisdictions may fund some improvements through traffic fee programs (as described above for West Sacramento), demand for highway facilities is generated on a regional level, and no single jurisdiction would be likely to collect sufficient funds to make highway improvements sufficient to reach or maintain acceptable LOS levels. There is no regional traffic mitigation fee program in the project area that can collect funds for state highway improvements. Even if sufficient funding were available for many needed improvements, factors such as limited available right-of-way and associated conflicts with existing developed land uses make adding needed lanes and interchange improvements infeasible. For these reasons, mitigation sufficient to reduce significant cumulative traffic impacts on state highway facilities to less than significant levels is considered infeasible. These cumulative impacts are considered significant and unavoidable.

As stated above, development assumptions included in the City of West Sacramento traffic model used to assess the Cumulative Plus Project Scenario are based on near buildout of the current City of West Sacramento General Plan in the City of West Sacramento, and Year 2025 SACOG Projected Population and Employment for all areas outside the City of West Sacramento. However, several of the projects listed in Table 5-1 that are considered in this cumulative analysis include development that is not consistent with the General Plan and would require amendments to the General Plan (e.g., Villages at Southport, River Park, Yarbrough, University Park). Much of this proposed development would convert areas identified as commercial and industrial uses in the General Plan to residential uses, and in the case of University Park would require annexation of 570 acres of new area to the City. Cumulatively, this development could result in several thousand additional housing units in the city not currently assumed in the General Plan or the City of West Sacramento traffic model.

Preliminary unpublished assessments of this modified West Sacramento buildout condition identify significant cumulative traffic impacts at various locations in the city. However, most of the locations where these impacts would occur are in the southern portion of the city and do not include intersections and roadway segments in the vicinity of the proposed project. Traffic generated by the Raley’s Landing project would contribute a very limited number of vehicle trips to roadway facilities in the southern portion of the city where these significant cumulative impacts would occur.

The City of West Sacramento is currently updating its traffic mitigation fee program. As part of this process, the City is identifying traffic infrastructure improvements needed to maintain acceptable levels of service under an updated citywide development scenario incorporating the projects requiring General Plan amendments. Once needed improvements are identified, necessary funding to implement these improvements will be estimated and the fee program will be adjusted to ensure sufficient funding becomes available. Updating of the city’s traffic mitigation fee program will result in implementation of traffic infrastructure improvements needed to mitigate cumulative traffic impacts associated with projects in Table 5-1 that are not consistent with the city’s General Plan. However, it cannot be assured at this time whether all significant cumulative impacts that might occur at each affected intersection and roadway segment can be mitigated to a less-than-significant level. Therefore, a conservative approach is taken and this cumulative impact is considered significant and unavoidable. However, as stated above, the proposed Raley’s Landing project is expected to contribute a very limited number of vehicle trips to traffic at intersections and roadway segments in the southern portion of West Sacramento where these impacts would occur. Therefore, the proposed project is not expected to make a substantial contribution to this significant and unavoidable cumulative impact.

5.3.4 AIR QUALITY

The proposed project site is in the jurisdiction of the Yolo-Solano Air Quality Management District (YSAQMD). Yolo County is within the Sacramento Valley Air Basin (SVAB), which also comprises all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, and Yuba Counties; the eastern portion of Solano County; and the western portion of Placer County. Past development in the county and throughout the Sacramento Valley has resulted, in combination with meteorological conditions and transport of pollutants from other air basins, in substantial to severe air quality problems in the SVAB. As described in Section 3.4, Air Quality, the SVAB is in severe nonattainment with state and federal ozone standards and nonattainment with state standards for respirable particulate matter 10 microns or less in diameter (PM_{10}). YSAQMD, in coordination with the other air quality management districts and air pollution control districts in the SVAB, prepared and submitted the 1991 *Air Quality Attainment Plan*, which specifically addressed SVAB’s nonattainment status for ozone and to a lesser extent PM_{10}.

With respect to emission trends and forecasts for the SVAB, the emission levels for the ozone precursors reactive organic gases (ROG) and oxides of nitrogen (NO_X) have been trending downward since 1980. Carbon monoxide (CO) emissions have also been trending downward since 1975. On-road motor vehicles are the largest contributors to CO, ROG, and NO_X emissions in the SVAB. The implementation of stricter mobile-source (both on-road and other) emission standards will continue to decrease vehicle emissions. Control on stationary-source solvent evaporation and fugitive emissions will also continue to reduce ROG emissions. However, PM_{10} emissions are trending upward from 1995 levels.

The Raley's Landing project would result in an individual significant and unavoidable air quality impact with respect to long-term regional emissions that exceed the YSAQMD thresholds. Although mitigation measures are expected to reduce project specific long-term regional emissions by approximately 3%, this is not enough to reduce levels below the YSAQMD recommended significance thresholds. Emissions attributable to the proposed project, along with emissions from other reasonably foreseeable future projects in West Sacramento and Sacramento and the SVAB as a whole, would continue to contribute to long-term increases in emissions that would exacerbate existing and projected nonattainment conditions in the SVAB. Thus, the proposed project would contribute to a significant and unavoidable cumulative air quality impact. The Raley's Landing project's incremental contribution to that cumulatively significant impact, therefore, is itself cumulatively considerable.

Because of the nonattainment status of the SVAB and the disturbance area associated with the Raley's Landing project, the proposed project is considered to result in significant and unavoidable construction-related air quality impacts, even with implementation of mitigation measures required by the YSAQMD, as identified in Section 3.4, Air Quality. Assuming that all related projects also implement all feasible construction emission control measures consistent with YSAQMD guidelines, construction emissions on a project-by-project basis could be less than significant, or significant and unavoidable, depending on the scale of the project and other factors. Because of the large scale and number of related projects, taken in total and combined with the nonattainment status of the SVAB for PM_{10}, construction-related emissions would result in a significant and unavoidable cumulative air quality impact. The proposed project would cause a cumulatively considerable (significant) incremental contribution to this cumulatively significant impact.

Given that compliance with applicable rules and regulations would be required for the control of stationary-source emissions of toxic air contaminants (TACs), both on and off the site, the project's contribution to long-term cumulative increases in stationary-source TAC concentrations would be considered minor. However, please note that specific stationary-source TAC emissions at a local level are considered a potentially significant impact in this DEIR because there is a theoretical potential for a sensitive receptor to be located near a stationary TAC source (see Impact 3.4-4). In addition, exposure to TACs from mobile sources, specifically diesel exhaust PM, is of growing concern within the Sacramento Valley. A major transportation corridor (i.e., SR 275/Tower Bridge Gateway) involving the operation of diesel-fueled vehicles is present in the project area. According to the traffic data prepared for this report, however, the cumulative traffic volume on this roadway is anticipated to be 23,200 vehicles per day in the year 2025, which is below the guidance parameter recommended by ARB (California Air Resources Board 2005). In addition, although specific land uses are not yet identified, development of land uses that involve extensive use of diesel-powered equipment or vehicles could contribute to an exceedance of thresholds at nearby sensitive receptors. Implementation of mitigation measures would reduce this potentially significant impact to a less-than-significant level. Consequently, the proposed Raley's Landing project would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact from the proposed project and related projects.

Cumulative traffic data (proposed project plus foreseeable future development) was used to specifically evaluate local mobile-source carbon monoxide (CO) concentrations for future conditions (i.e., 2025). Because cumulative traffic data was used for this analysis, the contribution to CO concentrations from the proposed project, related projects, as well as regional development to the degree it is reflected in the traffic model are all taken into account. The analysis was conducted for intersections projected to operate at LOS E or F. Both 1-hour and 8-hour CO concentrations were estimated based on worst-case meteorological conditions, p.m. peak-hour traffic volumes as presented in the traffic analysis, and emission factors modeled using the using the CALINE4 model with emission factors from EMFAC 2002. The estimated maximum 1-hour and 8-hour CO concentrations under cumulative traffic conditions would not exceed the significance thresholds of 20 parts per million (ppm) for 1 hour or 9 ppm for 8 hours. Furthermore, the localized concentrations of CO that would be generated would not be in close proximity to any sensitive receptors. Consequently, the cumulative impact of the Raley's Landing project and related projects is considered less than significant.

5.3.5 NOISE

Implementing the proposed project would result in significant and unavoidable noise impacts associated with construction activities; noise generated by on-site land uses, such as residential and commercial development; and impacts associated with on-site exterior noise levels resulting from adjacent land uses (e.g., I-5/SR 99).

Noise is a localized occurrence and attenuates with distance. Therefore, only future cumulative development projects in the direct vicinity of the project site would have the potential to add to anticipated stationary project-generated noise, thus resulting in cumulative noise impacts. Two related projects are in the vicinity of the proposed project: the proposed One Riverfront Plaza and the Triangle Specific Plan project, which is currently under construction (Exhibit 5-1). Each of these projects would generate types of noise similar to that of the proposed project and, as with the proposed project, each would have the potential to affect nearby residences and other sensitive receptors proposed at each project site.

The City of West Sacramento Municipal Code contains performance standards to restrict any use that may create dangerous, injurious, noxious, or otherwise objectionable conditions. The code includes noise standards for transportation and nontransportation sources. For the Raley's Landing project, it was determined that adherence to these noise regulations alone would not be sufficient to avoid significant construction noise impacts. It is similarly anticipated that compliance with these regulations alone would not avoid significant construction noise impacts associated with the related projects. Mitigation proposed for the project would not reduce construction-related noise to a less-than-significant level. Therefore, significant cumulative noise impacts associated with construction activities could occur. In addition, the proposed One Riverfront Plaza project and the ongoing Triangle Specific Plan project could potentially be under construction in the direct vicinity of the project site concurrently with the proposed project. Because the Raley's Landing project and related projects could combine and result in significant construction noise impacts, the Raley's Landing project could generate a cumulatively considerable incremental contribution to significant cumulative noise impacts. The West Sacramento Municipal Code contains reasonable measures for the minimization and control of construction noise. There are no additional feasible measures that could effectively be applied to all construction projects in the City, and that could reduce this significant cumulative impact to a less-than-significant level.

Stationary-source noise associated with the proposed and related projects could potentially result in exceedance of the City's noise regulations at sensitive receptors. While the noise from any stationary noise sources associated with the proposed project could be controlled at the source (by means of noise walls, enclosures, site planning, and so on), there is no guarantee that all the related projects would include such noise controls as part of their proposals. Hence, significant cumulative noise impacts associated with stationary noise sources could occur. However, noise levels are not directly additive and attenuate rapidly with distance. Because no related projects are in close enough proximity to the project site to have an additive affect from stationary noise sources and because the proposed project would not result in significant stationary noise impacts after mitigation, the proposed project would not result in a cumulatively considerable incremental contribution to any such significant cumulative noise impacts.

While construction and stationary-source noise can be controlled onsite at the point of origin, traffic noise may extend beyond a project site along existing roadways and result in significant traffic noise impacts on sensitive uses along these roadways. Because full buildout of the proposed Raley's Landing project would result in a perceptible increase in traffic noise on several roadways (Impact 3.5-4 in the noise analysis), the proposed Raley's

Landing project would contribute to a cumulative impact. Furthermore, the combined cumulative increase in traffic on I-5/SR 99, Tower Bridge Gateway, and local arterials anticipated for 2025 resulting from the Raley's Landing project, related projects, and regional growth would extend the 60-dBA noise contour distances for these roadway segments, resulting in a substantial number of additional existing and proposed sensitive receptors falling within this contour. Thus, the traffic noise impacts from the Raley's Landing project and cumulative development, taken together, are considered cumulatively significant. Construction of sound walls and other noise-attenuating features (e.g., berms, dual-pane windows) throughout the region would require a regional program and may not be feasible to implement. Because it is considered infeasible to sufficiently reduce noise at every existing and proposed sensitive receptor that would be affected, this cumulative traffic noise impact is considered significant and unavoidable, and the project's incremental contribution to the significant cumulative impact is itself cumulatively considerable (significant) and unavoidable.

5.3.6 PUBLIC SERVICES

The proposed project would generate a significant increase in demand for fire, police, school, and recreational services and facilities. Significant project impacts would be mitigated to less-than-significant levels through implementation of mitigation measures identified in Section 3.6, "Public Services," of this DEIR. These mitigation measures include, but are not limited to, incorporating fire prevention and protection measures into project planning and design, limiting occupancy of structures until adequate minimum fire flows have been confirmed, incorporating police protection and prevention measures into project planning and design, requiring payment by the applicant of fees and equipment costs to provide new firemen and police officers, and requiring payment by the applicant of school impact fees and park facility development fees.

In terms of cumulative impacts, the following analysis focuses on public services provided in the city of West Sacramento. Demand for and provision of public services in the city are influenced little by neighboring jurisdictions other than mutual aid agreements for fire protection. The City of West Sacramento and the appropriate service providers are responsible for ensuring adequate provision of public services within their jurisdictional boundaries. At this time, it is unclear whether sufficient police, fire, school, and recreational facilities are planned to serve all of the related projects identified earlier in this chapter. It is a City policy to ensure that balanced fiscal resources are available to fund public services for new development. While some of the related projects include proposals for the construction of service facilities, others do not. However, it is clear that sufficient police officers, fire stations, schools, and parks would need to be constructed to serve the related projects. State law provides that payment of school impact fees constitutes adequate CEQA mitigation for all project-specific and cumulative effects relating to adequacy of school facilities due to residential development.

Although a cumulative shortage of public services and facilities would not represent a significant environmental impact because these are not, strictly speaking, "environmental effects," such a shortage would lead to the need to develop additional public services facilities, which could lead to significant construction- and operation-related environmental effects. It is assumed that the development of the related projects, and/or development of the additional public service facilities required to serve them, would be preceded by the required CEQA review. However, conducting the required CEQA review would not necessarily preclude significant environmental effects associated with construction of new fire, police, school, and recreational facilities. Hence, significant cumulative environmental effects associated with the development of new fire, police, school, and recreational facilities could occur associated with the cumulative demand generated by related projects.

Although the proposed project would not generate significant project specific public services impacts after implementation of the mitigation measures identified above, and although the development of the proposed project would result in less-than-significant impacts for the majority of environmental issues evaluated in this DEIR, development of the proposed project would result in significant and unavoidable traffic, air quality, and noise impacts (see Chapter 7). It would also contribute incrementally to significant and unavoidable cumulative traffic, air quality, and noise impacts (see Chapter 7). Therefore, the proposed project could result in cumulatively considerable incremental contributions to potential significant cumulative environmental effects associated with the development of new public service facilities required to serve the project and cumulative development, and thus would result in a cumulatively considerable incremental contribution to significant cumulative public services impacts. Mitigation for individual project impacts are identified in Chapter 3 of this EIR, and mitigation related to significant cumulative impacts that the proposed project would contribute to are provided in appropriate locations in this chapter. It is not known at this time if, or how, public services facilities constructed in response to the related projects would result in substantial contributions to significant cumulative impacts. Therefore, no mitigation can be identified at this time related specifically to significant cumulative public services impacts.

5.3.7 PUBLIC UTILITIES

As indicated in Section 3.7, "Public Utilities," the proposed project would generate less-than-significant impacts associated with increased demands for water supply and treatment, increased demands for wastewater conveyance and treatment, increased demand for solid waste disposal, and increased demands for electricity and natural gas. However, as described in the discussions of Impact 3.7-4, it is anticipated that in 2007 wastewater from the City of West Sacramento will be treated at the Sacramento Regional Water Treatment Plant (SRWTP) rather than the existing City of West Sacramento Wastewater Treatment Plant. According to the Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final EIR (Sacramento County Department of Environmental Review and Assessment 2004), the construction of expansions to and operation of the expanded SRWTP would result in several environmental impacts, most of which would be reduced to less-than-significant level through mitigation. The only significant and unavoidable impact would be from short-term increases on NO_x during construction of SRWTP facilities. Because the Raley's Landing project would contribute to the need to expand the SRWTP, the project would also contribute to the significant and unavoidable impact related to air quality from expansions of the SRWTP. However, mitigation of air quality impacts associated with the SRWTP is the responsibility of the Sacramento Regional County Sanitation District and additional mitigation associated with the Raley's Landing project is not required. This issue, as it pertains to cumulative impacts, is discussed in more detail below.

In terms of cumulative impacts, the City is responsible for ensuring that water, wastewater, and solid waste services within its jurisdictional boundaries are adequately provided and that development within the city can be adequately served by electrical and natural gas providers. The City General Plan identifies goals and policies associated with providing water, wastewater, solid waste, electricity, and natural gas to new development, including many of the related projects identified in this chapter. The Urban Water Management Plan (UWMP) and Water Master Plan Update evaluates the existing water supply system, defines required improvements, and proposes new infrastructure to support the city's projected growth (see discussion below). For this cumulative analysis, it has been assumed that the City will begin using the SRWTP for wastewater treatment in 2007 as currently planned, and subsequently decommission the City of West Sacramento Wastewater Treatment Plant.

WATER

The City's current UWMP was adopted in December 2000, and revised in July 2002. The Water Master Plan, originally prepared in 1994 and updated in 2005, evaluates the existing water supply system, defines required improvements, and proposes new infrastructure to support the City's projected growth. It also identifies performance criteria for the water distribution system, water supply capacity, and water storage facilities. It is assumed that the development of related projects served by the City's water system, and/or the development of the additional utility systems required to serve them, would be preceded by the required CEQA review. However, it cannot be assumed that all potential environmental impacts associated with the development of the additional water capacity and infrastructure required to serve these related projects would necessarily be mitigated to less-than-significant levels. Therefore, potentially significant cumulative utilities impacts could occur related to water treatment capacity and infrastructure.

As discussed in Section 3.7 of this DEIR, a Senate Bill (SB) 610 water supply assessment report has been prepared for the proposed project (Appendix F of this DEIR). The assessment evaluates the adequacy of existing and future water supplies to meet the water demand created by the Raley's Landing project in conjunction with existing development in the city and future related projects. As shown in Table 3.7-3 of this DEIR, the total water demand for the proposed project is estimated to be 398,695 gallons per day or 0.40 million gallons per day (mgd). The proposed project would increase water demand by approximately 3% over the City's current water use and would represent approximately 1% of the city's current surplus assured supply. Demand calculations in the Water Master Plan Update determined the total average daily demand and maximum daily demand for the City during the buildout year (2020) to be 26.0 mgd and 52.0 mgd, respectively (Murray Smith & Associates 2005).

The majority of the city, including the proposed project site, is located within the boundaries of the North Delta Water Agency (NDWA), and therefore water supplies for these sections of the city are guaranteed by the contract between the NDWA and the State of California. The remainder of the city receives surface water from the Sacramento River under two entitlements: an appropriative water right entitlement (Permit #18150) issued to the City by the State Water Resources Control Board, as well as a 40-year contract with the U.S. Bureau of Reclamation (USBR) for delivery of Central Valley Project (CVP) supplies. The city's surface water supply is assured under the NDWA contract even if its appropriative rights and CVP contract deliveries are reduced. The City may divert as much Sacramento River water as needed to reasonably serve the portions of the city in the NDWA boundaries.

During recent drought years, diversions from the Sacramento River by water purveyors within the NDWA, including the city, were not reduced. If surface water supply secured by Water Rights Permit 18150 is reduced 100% from June through October, and the USBR contract is reduced 75% during that same time, a sufficient supply to meet projected annual requirements should still be available through surface water provided pursuant to the NDWA contract. Therefore, ample water supply (based on all available city water rights) is available to meet existing and future demand in the NDWA area through 2020. Overall, there is adequate water supply to serve existing and probable future projects in the City. The Raley's Landing project and related projects would not result in cumulative impacts related to water supply.

The Bryte Bend Water Treatment Plant diverts water from the Sacramento River at the plant's intake structure and provides the main source of treated water supply for the city. The capacity of the treatment plant is 40 mgd (November through March) or 58 mgd (April through October). Currently, average daily water usage in the city is approximately 13 mgd, with a peak summer use of 24 mgd (City of West Sacramento 1996). Total average daily demand and maximum daily demand for the City during the buildout year (2020) was projected to be 26.0 mgd and 52.0 mgd, respectively. Therefore, additional flow to the proposed project and related projects would not exceed the maximum capacity and a cumulative impact related to water treatment capacity would not occur.

WASTEWATER

Wastewater Conveyance Facilities

Project implementation would result in the need for additional on-site wastewater conveyance facilities. A utility study was conducted for the Raley's Landing project to determine the adequacy of existing sewer infrastructure facilities and potential off-site improvements necessary to develop the proposed project. The analysis conducted for the utility study determined that existing backbone sewer infrastructure had adequate capacity to serve the proposed project, and no off-site sewer infrastructure improvements would be necessary.

Existing sewer flows, measured in 2002, determined that the 24-inch pipeline that parallels F Street and conveys wastewater flows to the Jefferson Pump Station has an average peak flow of 3.2 mgd. The proposed project would add an estimated peak flow of 0.83 mgd, increasing the peak flow in this pipeline to 4.03 mgd. According to the utility study conducted for the Raley's Landing project, this additional flow is below the pipe's maximum capacity of 4.3 mgd and would be adequate to serve the proposed project. However, as development of related project occurs in the area, this pipe would ultimately require upsizing. It is assumed that the development of related projects, and/or the development of the additional utility systems required to serve them, would be preceded by the required CEQA review. However, it cannot be assumed that all potential environmental impacts associated with the development of the additional wastewater capacity and infrastructure required to serve these related projects would necessarily be mitigated to less-than-significant levels. The proposed project and related projects would contribute to the need to expand wastewater conveyance capacity; therefore, cumulative impacts associated with increased demand for wastewater conveyance facilities would result in a cumulatively considerable incremental contribution to this cumulatively significant impact from the proposed project and related projects. It is not known at this time if, or how, expansion of sewer flow capacity in the project vicinity would result in substantial contributions to significant cumulative impacts. Therefore, no mitigation can be identified at this time related specifically to significant cumulative public services impacts.

Wastewater Treatment Facilities

In addition, cumulative development, including related projects and projects in the regional planning area assessed in this cumulative analysis, would contribute to the need for expansion of the SRWTP. Because the need to expand the SRWTP is due to cumulative development, this significant and unavoidable SRWTP impact is also considered a significant and unavoidable cumulative impact. The construction of expansions to and operation of the expanded SRWTP as described in the SRWTP 2020 Master Plan Final EIR would result in several environmental impacts, most of which would be reduced to a less-than-significant level through mitigation. The only significant and unavoidable impact would be from short-term increases in NO_x during construction of SRWTP facilities. The proposed project and related projects would contribute to the need to expand wastewater treatment capacity at the SRWTP facility; therefore, cumulative impacts associated with increased demand for wastewater treatment facilities would result in a cumulatively considerable incremental contribution to this cumulatively significant impact from the proposed project and related projects.

As described in Section 3.7, “Public Utilities,” the proposed project is estimated to generate a 0.28 mgd average dry weather flow and 0.83 mgd peak daily flow. The expansion analyzed in the SRWTP Master Plan EIR would provide 37 mgd of additional capacity to the plant’s existing capacity of 181 mgd for a total capacity of 218 mgd. These flows would constitute 0.75% and 2.2% of the expanded SRTWP capacity respectively. Although the average dry weather flow would not contribute substantially to the cumulative SRTWP (0.75%), it can be argued that generating 2.2% of the expanded capacity during peak daily flows could be considered a substantial contribution to the need to expand the SRTWP, and therefore also a substantial contribution to significant cumulative impacts associated short-term increases in NOx during construction of the expansion. However, as stated above, mitigation of air quality impacts associated with the SRWTP is the responsibility of the Sacramento Regional County Sanitation District and additional mitigation associated with the Raley’s Landing project is not required. Measures to reduce the Raley’s Landing project’s contribution to cumulative air quality impacts are provided in Section 3.4 of this EIR and Section 5.3.4 above.

Flow to the SRWTP would increase over time as development increases in the SRCSD service area. According to the SRWTP 2020 Master Plan, the permitted capacity of the SRWTP is expected to be reached before 2010. The 2020 Master Plan provides for the expansion of the SRWTP to 218 mgd based on growth rates expected to be achieved in the County by 2020. This flow rate does not represent a buildout population total for the SRCSD; rather, it represents the amount of growth expected within the district based on projections. Thus, if new development is approved prior to 2020, it is assumed that it would not change the rate of growth in the district; rather, it would change the potential location within the SRCSD of where the growth would occur. Expansion is planned to be phased to provide for sufficient long-term capacity for future related projects. Because the SRWTP is planned to accommodate growth in the County by 2020, development on the project site would be accommodated by planned SRWTP capacity. Over time, additional planning at SRWTP would occur, and overall capacity would be assessed and additional capacity planned for and added. The SRWTP site has sufficient land area to accommodate a substantially higher flow than 218 mgd. Because the SRWTP would have adequate capacity to serve the project and other development in its service area, cumulative impacts related to availability of wastewater treatment capacity are not considered significant and the proposed project would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact.

SOLID WASTE

Project impacts related to increased generation of solid waste would be considered less than significant. The Yolo County Central Landfill, which would receive project waste, has approximately 16 million tons of capacity remaining and is expected to remain open over the next two decades. The landfill accepted 180,553 tons of material in 2003 (CIWMB 2004). The estimated 5,950 tons per year of solid waste generated by the proposed project would make up 3% of this annual total. Because this landfill would have adequate capacity to serve the project and other development in its service area, cumulative impacts related to solid waste are not considered significant, and implementing the proposed project would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact.

ELECTRICITY AND NATURAL GAS

The city obtains its electrical and natural gas supply from the Pacific Gas and Electric Company (PG&E). As evaluated in Impact 4.11-h, the energy demands to be created by the proposed project would not be substantial in relation to the total amount of energy supplied. Cumulative development would increase the amount of demand for electrical and natural gas supply. PG&E has acknowledged that it has adequate electricity and natural gas supplies to support the project without affecting service to existing customers. The total amount of energy supplied by PG&E in its northern and central California service area was estimated to be 81,923 million kilowatts per day of electricity and 887 million cubic feet per day of natural gas in 2000. Additional energy is expected to be available as power plants come on line in the future. Therefore, sufficient electricity and natural gas supplies are available to support cumulative development and cumulative electricity and natural gas impacts from the Raley's Landing project and related projects. The project would not result in a cumulatively considerable incremental contribution to this cumulatively significant impact from the proposed project and related projects.

5.3.8 GEOLOGY AND SOILS

The proposed project would result in potentially significant impacts related to seismic hazards, shrink-swell soils, and corrosive soils. Although the Sacramento Metropolitan area is located in an area of low seismic activity, faults in the region, such as the Dunnigan Hills fault approximately 30 miles west/southwest of the City of West Sacramento, could cause moderate ground shaking throughout the region. The California Geological Survey indicates that the project area is located in a region of moderate earthquake intensity. Earthquakes of maximum intensity in this region would cause general alarm and moderate damage. If project structures are not designed or constructed appropriately, a large seismic event could expose the occupants of these structures to a substantial risk of loss, injury, or death. In addition, the presence of a fluctuating, shallow groundwater table at the project site and the presence of soils moderately susceptible to shrink swell conditions could cause failures to underground structures over the long term. The potential for corrosive soils at the project site could also cause failures to underground structures over the long term. Implementation of mitigation measures identified in Section 3.8, "Geology and Soils," would reduce these impacts to less-than-significant levels through completion of site-specific geotechnical studies and implementation of construction and design measures developed in response to the studies.

Implementation of the various related projects and other projects in the region could expose additional structures and people to seismic and soil hazards. The potential seismic and soil hazards, therefore, could represent a significant cumulative impact if projects are not developed to the latest building standards and do not incorporate recommendations from site-specific geotechnical reports and grading/erosion plans prepared for these projects. However, each project considered in this cumulative analysis must individually meet building code requirements, and no additive effect would result from the combination of the projects considered in this cumulative analysis and the Raley's Landing project. Therefore, no significant cumulative affect related to seismic or soil hazards would occur. Implementation of the proposed project would not create additional facilities under increased risk of hazards and would not result in any cumulatively considerable incremental contributions to any significant cumulative impacts.

5.3.9 Hazards and Hazardous Materials

The proposed project and related projects would all involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. Impacts related to these activities are considered less than significant under the proposed project because the storage, use, disposal, and transport of hazardous materials are extensively regulated by various federal, state, and local agencies, and it is assumed that those involved with the project would implement and comply with these existing hazardous materials regulations. Therefore, significant hazards to the public would not occur. Because these laws and regulations would also apply to each related project, this impact would be considered less than significant on both an individual project and cumulative basis. Although some of the related projects would include industrial components that could result in the use and storage of relatively large quantities of hazardous materials, such as the Southport Business Park and Riverside Center, these larger users are subject to more stringent regulation and monitoring, resulting in reduced risk and the same less-than-significant impact conclusion.

5.3.10 Hydrology and Water Quality

Flood Protection

Both the Sacramento River and the American River flow through the project region. Flood control levees in the cities of West Sacramento, Sacramento, and in other jurisdictions along these rivers protect development in the floodplain, with the level of flood protection varying depending on the size, configuration, and quality of the levees. Much of downtown Sacramento, as well as other portions of the American River Floodplain within the city, were removed from the 100-year flood hazard area in early 2005. Due to various levee improvements along the American River and other flood control projects, the Federal Emergency Management Agency (FEMA) modified the Flood Insurance Rate Maps in the City and removed large areas from the 100-year floodplain. The Raley's Landing project site is located in an area that is protected by flood control levees that provide protection from flood magnitudes of up to the 1-in-400 Annual Exceedance Probability event (i.e., 400-year flood).

The Raley's Landing project, as well as the related projects and a vast majority of past, present, and probable future development in the project region are located outside the 100-year floodplain. Therefore, there would not be a cumulative decrease in available flood storage and increase in flood elevations through the removal of areas from the 100-year floodplain. A significant cumulative flood protection impact would not occur through this mechanism. Local and regional development could lead to an incremental increase in additional discharges of stormwater into the Sacramento River and the American River during storm events. In theory, this could lead to an incremental increase in peak stormwater runoff to these rivers and potential increases in downstream flood elevations. However, local jurisdictions implement various regulations and guidelines regarding stormwater detention, run-off rates, and discharge rates. These regulations and guidelines are in place, in part, to minimize run-off discharges during flood events. Therefore, there would not be a significant cumulative increase in downstream flood elevations due to increased generation of stormwater runoff associated with cumulative development. A significant cumulative flood protection impact would not occur through this mechanism. Overall, the Raley's Landing project would not provide any cumulatively considerable incremental contributions to any significant cumulative flood control impact.

Groundwater Quality

The proposed project and related projects in the City of West Sacramento would be supplied with municipal water from the City of West Sacramento, which uses surface water from the Sacramento River as a water source. The City maintains and operates five groundwater wells; however, because of poor water quality in these wells, the City has made a decision to discontinue use of groundwater and formally abandon these wells. Therefore, groundwater would not be used as a water source for the proposed project and related projects in the City and no new groundwater wells would be constructed to serve the project or other projects in the City. There is no potential for a significant cumulative groundwater impact in the City and the proposed project could not provide any cumulatively considerable incremental contributions to any significant cumulative groundwater impact.

SURFACE WATER QUALITY

Earth-moving, grading, and construction activities for the proposed project would involve land clearing and soil disturbances, which could leave disturbed areas and stockpiled soils exposed to winter rainfall and stormwater runoff. Although the project site is relatively flat and the potential for soil erosion is low, areas of exposed or stockpiled soils could be subject to sheet erosion during short periods of peak stormwater runoff, allowing temporary discharges of soil and construction-related contaminants to the local storm drain system and ultimately to the Sacramento River. Construction dewatering discharges to adjacent land or drainage facilities might contain elevated levels of suspended sediments and other construction-related contaminants. Stormwater runoff and construction dewatering discharges could increase sedimentation in receiving waters, leading to short-term impaired water quality in the Sacramento River. In addition, implementation of the proposed project could change the long-term potential for contaminant discharges at the project site. There is the potential for the project to cause or contribute to long-term discharges of urban contaminants (e.g., oil and grease, fuel, trash, pesticides, fertilizer) into the City's stormwater drainage system and ultimately the Sacramento River. Implementation of mitigation measures described in Section 3.10, "Hydrology and Water Quality," would reduce construction- and operation-related water quality effects to less-than-significant levels. While there are no assurances that the related projects would incorporate the same degree or methods of treatment as the Raley's Landing project, each related project that would discharge stormwater runoff would be required to comply with National Pollutant Discharge Elimination System discharge permits from the RWQCB. Therefore, impacts of related projects on construction-related water quality effects would be expected to be less than significant. The proposed project would not provide a cumulatively considerable incremental contribution to any significant cumulative surface water quality impact.

SURFACE DRAINAGE

The Raley's Landing project includes mitigation to develop an extensive stormwater management system to collect, detain, and discharge stormwater runoff generated in the Raley's Landing area. The project's stormwater system would be designed to prevent localized flooding and integrate project-related stormwater drainage into the city's local drainage conveyance facilities. As a result, no adverse project-specific impacts, significant or otherwise, would occur. Therefore, the proposed project would not incrementally contribute to any cumulative impacts relating to the provision of stormwater conveyance. In other new developments considered in this cumulative analysis, stormwater conveyance would also consist of surface runoff to local drainage conveyance facilities. Such new development, like the Raley's Landing project, would be required to comply with the policies of the local jurisdictions drainage plans. In addition, impacts of related projects would undergo separate environmental review to ensure that adequate surface drainage facilities are included as part of those projects. For these reasons, it is expected that future development would result in less-than-significant cumulative stormwater conveyance impacts.

5.3.11 BIOLOGICAL RESOURCES

Although the proposed project is bordered by the Sacramento River waterfront, no portion of the proposed project is located on the river side of the levee. The levee provides a topographical and hydrological separation between the river and the project site. All project activities would be located west of the levee, and the Sacramento River would not be affected. Therefore, fisheries would not be affected by the project. The project site does not contain drainages or wetlands or any potential habitat for special-status plant species; therefore, no impacts on wetlands and other waters of the United States and special-status plant species would occur. The project site is located in an urbanized area, and it neither connects nor separates any significant wildlife habitat areas, and implementation of the proposed project would not disrupt wildlife movement, use of migratory corridors, or use of nursery sites. The proposed project would result in significant impacts related to losses of valley elderberry longhorn beetle habitat, loss of Swainson's hawk habitat; loss or disturbance of active raptor nests; removal, disturbance, or degradation of the remnant riparian habitat; and disturbance of protected trees. These impacts would be mitigated to less-than-significant levels with implementation of mitigation measures identified in Section 3.11, "Biological Resources."

Past development in Yolo and Sacramento counties, ranging from conversions of land to agricultural production more than 100 years ago, to recent development projects, have resulted in substantial conversions of native habitat to other uses. Although future projects would be expected to mitigate for impacts on threatened and endangered species and other biological resources provided regulatory protections, many types of habitats and species are provided no protection and it can be expected that a net loss of native lands, agricultural lands, and open space areas that provide value to biological resources will continue. Neither Yolo County nor Sacramento County have a countywide Habitat Conservation Plan or Natural Community Conservation Plan in place. Therefore, there is no regional guiding plan to ensure adequate compensation/mitigation for cumulative impacts on plant and wildlife species. Cumulative development in the region can be expected to have a substantial adverse affect on various biological resources, including substantially reducing habitat for fish and wildlife species; therefore, significant cumulative impact on biological resources would occur.

Although annual grasslands, remnant riparian forest, and habitat for various wildlife species occurs at the Raley's Landing project site, the project site is located in an urban area with nearby development (homes, office building, landscaped park) on all sides. The habitat at the site is not of high quality, supports a relatively low diversity of vegetation and wildlife, is subject to frequent human disturbance, and does not connect to any significant habitat features. Most of the wildlife species observed or expected on the project site are adapted to urban environments, and several are nonnative species. The project site has been developed with urban and industrial uses in the past (see Section 3.13, "Cultural Resources"), beginning as early as the 1850s, and is within what would be considered the core urban development envelope of the West Sacramento/Sacramento area. Given these conditions, the loss of biological resources at the Raley's Landing project site would not provide cumulatively considerable incremental contributions to the significant cumulative impact on biological resources identified above.

5.3.12 VISUAL RESOURCES

The project site would be modified from undeveloped areas to developed urban uses, and the existing local skyline, which is dominated by the Ziggurat, would contain multiple structures that would be clearly visible from nearby residences, I-5, U.S. 50, the Tower Bridge, and Old Sacramento. Past development in the region along the I-5, U.S. 50, and Sacramento River viewsheds has increasingly changed the visual character from undeveloped land to developed urban uses, thus altering and limiting the views available to residents, recreationists, and motorists. This trend would continue as future projects are implemented in the region, and the proposed project would contribute to this cumulative change in views. As development proceeds in the project region as a whole, substantial changes in visual conditions would continue as open viewsheds are replaced by urban development. Increased urban development would also lead to increased nighttime light and glare in the region and more limited views of the night sky. The cumulative effect of these changes on aesthetic resources from past and planned future projects, as well as the contribution from the proposed project, is considered significant. Although these cumulative impacts can be minimized to a degree through vegetative and topographic screening of structures, use of outdoor lighting that limits glare, appropriate building design, and other measures, the significant cumulative impact cannot be fully mitigated. Therefore, the cumulative change of views in the project region to urban land uses and the associated increase in nighttime light and glare are considered significant and unavoidable impacts. In addition, the project's incremental contribution to these impacts is cumulatively considerable (i.e., significant in and of itself). There is no feasible mitigation to reduce this significant cumulative impact to a less-than-significant level.

5.3.13 CULTURAL RESOURCES

Cultural resources in the project region generally consist of prehistoric sites, historic sites, historic structures, and isolated artifacts. During the 19th and 20th centuries, localized urbanization and intensive agricultural use of the region resulted in the destruction or disturbance of numerous prehistoric sites while many structures now considered to be historic were erected. From the latter half of the 20th century to the present, prehistoric and historic structures have been disturbed and destroyed. During this period, the creation and enforcement of various regulations protecting cultural resources have substantially reduced the rate and intensity of these impacts; however, even with these regulations, cultural resources are still degraded or destroyed as cumulative development in the region proceeds.

With regard to the Raley's Landing project, one previously unrecorded cultural resource, the remains of the California Transportation Company Ship Building Yard, was found during the background research, inventory, and testing phases conducted in support of this EIR. Remains of the shipyard have been identified in the River 3 area, and the possibility exists that additional remains associated with the resource might also be found in the River 2 area. Mitigation measures require archeological monitoring during construction activities, and if potentially significant materials are uncovered during construction, all ground-disturbing activities must cease until the extent, character, and potential significance of the find is determined and appropriate mitigation is developed. This impact would be reduced to a less-than-significant level with this mitigation.

Five National Register of Historic Places properties have been documented in the vicinity of the project area: the I Street Bridge, the Old Sacramento Historic District, the J Street wreck, the first Pacific Coast salmon cannery, and the Tower Bridge. As discussed in Section 3.13, "Cultural Resources," development associated with the proposed project would have no adverse effect on these resources.

As-yet-undiscovered subsurface cultural resources might also underlie the Raley's Landing area. Mitigation measures are outlined in Section 3.13, "Cultural Resources," of this DEIR to mitigate impacts on important cultural resources to less-than-significant levels. Implementing these mitigation measures also would ensure that implementing the proposed project would not incrementally contribute to any significant cumulative impacts on important cultural resources in the project region. These measures are fairly standard to ensure compliance with State CEQA Guidelines Section 15064.5 and related provisions of the Public Resources Code, and it is assumed that similar measures would be applied to related projects, and other projects in the region, as appropriate. Moreover, where federal agency approvals are required to implement projects, additional protection would also be anticipated under the National Historic Preservation Act, which, as commonly implemented by federal agencies, making measures such as those described herein fairly standard as well.

Because important cultural resources sites in the project area are protected, and the loss of other sites (i.e., sites not provided regulatory protection) is not significant, implementing the proposed project would not incrementally contribute to a significant cumulative effect on cultural resources.

6 GROWTH-INDUCING IMPACTS

6.1 INTRODUCTION

CEQA Section 21100(b)(5) specifies that the growth-inducing impacts of a project must be addressed in an EIR. Section 15126.2(d) of the State CEQA Guidelines provides the following guidance for assessing growth-inducing impacts of a project:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can induce growth directly or indirectly or both. Direct growth inducement would result if a project involved construction of new housing. Indirect growth inducement would result, for instance, if implementing a project resulted in any of the following conditions:

- substantial new permanent employment opportunities (e.g., new commercial, industrial, or governmental enterprises);
- a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new temporary employment demand; or
- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line, or other types of infrastructure services, with excess capacity to or through previously unserved areas).

Growth inducement itself is not an environmental effect but may foreseeably lead to environmental effects. These environmental effects may include increased demand on other community and public services and infrastructure, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, or conversion of agricultural and open space land to urban uses.

6.2 PREVIOUS ASSESSMENTS OF GROWTH-INDUCING IMPACTS FROM RELEVANT LOCAL PLANS

For two decades, the Raley’s Landing project site has been designated for urban development in a variety of local planning documents. Before the city of West Sacramento was incorporated in 1987, the vision for the area along the Sacramento River (including the River 1, 2, and 3 areas) involved a mix of uses that would take advantage of the immediately adjacent riverfront. The original PD-30 text, adopted in 1986, describes a variety of commercial, office, and residential uses and encourages development of mixed-use structures. The *City of West Sacramento General Plan*, adopted in 1990, envisions a strong, vibrant, and healthy metropolitan downtown along the river that provides a world-class urban experience for workers, visitors, and a large residential population; West Capitol Avenue, in particular, is envisioned as an active and attractive mixed-use commercial and residential core. The General Plan land use designation for the proposed project site is Riverfront Mixed Use, which provides for hotel and motel uses, midrise and high-rise offices, and multifamily residential units, among other uses.

The two documents most relevant to this discussion are the *Washington Specific Plan* and the Raley's Landing Development Agreement. In the *Washington Specific Plan*, adopted in 1996, the project site is designated for mixed-use development that is oriented toward the Sacramento River or West Capitol Avenue. This designation allows a variety of uses, including midrise and high-rise offices, multifamily residential units, hotels and motels, retail, restaurants, and amusement. A portion of the project site is located in a neighborhood commercial overlay district. This designation allows neighborhood and locally oriented retail and personal or professional services to be developed in addition to the underlying permitted uses (in this case, the riverfront mixed uses). Multifamily residential or neighborhood commercial uses are permitted on the upper floors. The purpose of this overlay district is to create centrally located neighborhood shopping areas composed of convenient, pedestrian-oriented shopping, services, sidewalk areas, and neighborhood gathering places.

The analysis of growth inducement in the EIR prepared for the *Washington Specific Plan* considers development of the entire Washington Specific Plan area, including the location proposed for the Raley's Landing project. The EIR concludes that implementing the specific plan would be growth inducing for the following reasons:

- It would foster economic growth, population growth, and the construction of additional housing in the surrounding environment.
- It would result in the upgrade to and/or extension of public services, facilities, and utilities to and in the plan area.
- It could attract other, similar development, creating a center of employment.

The Raley's Landing Development Agreement, dated January 12, 1996, focuses on a portion of the Washington Specific Plan area that includes the areas identified as the River 1, 2, and 3 areas for the proposed project, as well as the areas that have since been developed with the Ziggurat and the associated parking garage. Unlike the *Washington Specific Plan*, which identifies land use designations and zoning that guide the type of development, the development agreement specifically identifies the development anticipated for the area, including 945,000 square feet of office uses (400,000 square feet of which was developed with the Ziggurat), 46,000 square feet of retail uses, 218 apartment units, and a 428-room hotel.

The development agreement does not address the Washington Street property. As described in Chapter 4 of this EIR, "Alternatives Analysis," the Washington Specific Plan EIR assumes that the Washington Street property would be developed with 500,000 square feet of office uses and no other uses.

6.3 GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT

As discussed above, the *Washington Specific Plan* and the Raley's Landing Development Agreement anticipate that the project site would be developed with a mix of residential, commercial, and office uses. The Raley's Landing project proposes generally the same land uses described in those documents although in different densities. The project proposes 845,000 square feet of office uses (200,000 square feet less than the amount allowed under the *Washington Specific Plan* and the development agreement), 102,000 square feet of commercial uses (4,000 square feet less than the amount allowed under the specific plan and the development agreement), up to 900 multifamily residential units (up to 850 if the hotel is built) (339 or 289 more units, depending on whether the hotel is built, compared with the amount allowed under the specific plan and the development agreement), and possibly a 100- to 300-room hotel with a 7,000- to 15,000-square-foot conference room (at least 128 fewer rooms compared with the hotel described in the development agreement; the size of the convention facilities is not described in the development agreement).

Implementing the Raley's Landing project would induce growth directly through the construction of up to 900 multifamily residential units on the project site. Construction of these units is expected to increase the population in West Sacramento by approximately 2,026 persons. In addition to the residences that are proposed as part of the project, additional housing might be constructed to meet the City's affordable housing requirement. The City's affordable housing ordinance (Chapter 15.10 of the City Municipal (Code) calls for at least 15% of new and substantially rehabilitated dwelling units developed in the West Sacramento General Plan area to be affordable to low- and moderate-income households, and 40% of these units would be available at a cost affordable to very low income households. However, the ordinance allows for some flexibility in how a specific project can meet the City's affordable housing requirements. The Raley's Landing project applicants are coordinating with the City to determine whether the affordable housing requirement would be met through construction of affordable units on the project site, construction of affordable units off-site, or payment of a fee to cover the future construction of affordable housing. The selection of any of these options would result in construction of housing beyond the 850–900 housing units included as part of the proposed project. The number of additional residential units to be constructed would be determined through coordination with the City. The construction of these units is considered a growth-inducing impact of the proposed project.

An indirect effect of implementing the project would be increased development pressure on parcels adjacent to the project site. The overarching goal of the project is to stimulate integrated, mixed-use development in the Washington Specific Plan area. Implementing the proposed project could accelerate the pace of planned development, leading to the conversion of vacant parcels into mixed-use development consistent with the *Washington Specific Plan*. The presence of the proposed project could increase the property values for nearby residents and alter the character of the neighborhood, thereby increasing incentives for residents to sell their property and possibly allowing single-family residences to be replaced by high-density housing consistent with the *Washington Specific Plan*.

The project involves development of up to 900 multifamily residential units with an estimated population of 2,026. Although the project includes the provision of substantial commercial and retail services, on-site services would not be expected to meet all the needs of the project population. Additional services would be located elsewhere in West Sacramento and in Sacramento; however, the additional population associated with the proposed project would still be expected to spur an increase in demand for goods and services in the city and region that could potentially result in additional development to satisfy the demand. In this respect, the project would be growth inducing. It would be speculative to try to predict where new services would be located, but the most logical assumption is that they would be located in shopping areas in the vicinity of the project site that likely would be revitalized and expanded to capitalize on the new nearby residential development.

As described in Section 3.2, "Population, Employment, and Housing," the project is expected to generate approximately 3,253 jobs and approximately 1,314 employed residents. The project would be job rich, which could potentially generate additional housing demand in the city and facilitate additional housing development. However, when the excess number of jobs is considered in conjunction with related current and future housing projects in the city, overall housing opportunities in the city are expected to increase parallel with increased housing demand. In addition to the housing proposed by the Raley's Landing project, 1,139 single-family and multifamily units are planned for the Rivers development, north of the proposed project, and up to 5,000 high-density residential units are planned for the Triangle Specific Plan area, south of the project. It is expected that as development continues in the region, the jobs-housing index will remain relatively balanced. Therefore, any potential increase in housing demand in the city and county attributable to jobs generated by the proposed project would be minimal, and the project would not be growth inducing in this respect.

The project site is located in an urban area with existing roadways. No additional roadways would be constructed to serve the project. The project would not provide new access or substantially enhance access to currently undeveloped areas, so it would not be growth inducing in this respect.

The public utilities infrastructure (i.e., water supply and distribution, wastewater service, electrical service, and natural gas service) necessary to serve the project is already in place near the site. Implementing the project would require minor connections to this existing infrastructure. No expansion of public utilities infrastructure would be required, so implementing the project would not result in the development of excess capacity to serve any other development and therefore would not be growth inducing.

The proposed project would involve a substantial construction effort over approximately 4 years that during peak periods is estimated to bring 50–70 construction workers to the project site daily. Because construction workers typically do not relocate when assigned to a new construction site, no substantial population increase from relocation of construction workers to West Sacramento is anticipated. In addition, 1,091 residents in the city and 4,259 residents in the county are employed in the construction industry (U.S. Census Bureau 2002). This existing number of residents in the city and county who are employed in the construction industry would likely be sufficient to meet the demand for construction workers that would be generated by the proposed project. Therefore, no substantial increase in demand for housing or goods and services would be created by project construction workers, and no growth inducement associated with these workers would occur.

Overall, the Raley's Landing project would be directly growth inducing because it involves construction of up to 900 multifamily dwelling units that are expected to house approximately 2,026 persons. In addition to these dwelling units, additional housing would be constructed to meet the City's affordable housing requirement. The project is also expected to be indirectly growth inducing because implementing the project likely would increase development pressure on parcels adjacent to the project site, leading to the conversion of vacant parcels into mixed-use development and encouraging neighboring residents to sell their property, possibly allowing single-family residences to be replaced with high-density housing. The project also would be indirectly growth inducing because the increased population associated with the proposed project would increase demand for goods and services, thereby fostering economic and population growth in the city and nearby communities.

7 SIGNIFICANT AND UNAVOIDABLE IMPACTS AND SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL IMPACTS

7.1 SIGNIFICANT AND UNAVOIDABLE IMPACTS

7.1.1 INTRODUCTION

Section 15126.2(b) of the California Environmental Quality Act Guidelines (State CEQA Guidelines) requires EIRs to include a discussion of any significant environmental impacts that cannot be avoided if the project is implemented. Chapter 3 of this DEIR provides a detailed analysis of all potential significant environmental impacts associated with implementing the Raley's Landing project, identifies feasible mitigation measures that could reduce or avoid the project's significant impacts, and states whether these mitigation measures would reduce these impacts to less-than-significant levels. Chapter 5 identifies the significant cumulative impacts of the project. This chapter provides a summary of the significant environmental impacts of the proposed project that cannot be mitigated to less-than-significant levels.

As described below, implementing the Raley's Landing project would result in significant and unavoidable adverse impacts in four environmental issue areas, and the project would make a cumulatively considerable incremental contribution to significant cumulative impacts in six issue areas.

7.1.2 TRANSPORTATION AND CIRCULATION

Section 3.3, "Transportation and Circulation," presents an analysis of project-related traffic impacts under existing conditions (the existing roadway network and existing traffic volumes) and under cumulative conditions (existing project plus future regional development plus planned future transportation network improvements). Under each condition, project-generated traffic would result in significant adverse impacts that cannot be mitigated to less-than-significant levels.

With the project, the impact related to operations at the Jefferson Boulevard/Sacramento Avenue intersection would be significant if the feasible mitigation identified to reduce this impact to a less-than-significant level is not implemented before vehicle trips generated by the proposed project contribute to degradation of LOS at the intersection to an unacceptable level.

With or without the project, the impact related to operations at the Third Street/Tower Bridge Gateway intersection would be significant, and sufficient feasible mitigation is not available to reduce this impact to a less-than-significant level.

With or without the project, the impact related to operations at the following state highway facilities would be significant under the cumulative traffic scenario, and sufficient feasible mitigation is not available to reduce this impact to a less-than-significant level:

- The weaving section on U.S. Highway 50 (U.S. 50) westbound between Interstate 5 (I-5) and South River Road would operate at level of service (LOS) F during the a.m. and p.m. peak hours.
- The weaving section on U.S. 50 eastbound between South River Road and I-5 would operate at LOS F during the a.m. and p.m. peak hours.
- The weaving section on I-5 southbound from the P Street on-ramp would operate at LOS F during the p.m. peak hour.

- The weaving section on I-5 northbound between the P Street on-ramps and the J Street off-ramps would operate at LOS F during the a.m. and p.m. peak hours.

- The weaving section on I-5 southbound between the J Street on-ramps and the Q Street off-ramps would operate at LOS F during the p.m. peak hour.

With or without the project, the impact related to operations at the following intersections in the city of Sacramento under the cumulative buildout condition would be significant, and no mitigation applicable to the proposed project is available to address this impact:

- Third Street/Capitol Mall,
- Third Street/J Street,
- Third Street/P Street, and
- I Street/Jibboom Street.

7.1.3 AIR QUALITY

As indicated in Section 3.4, "Air Quality," in the discussion of Impact 3.4-1, implementing the proposed project could result in emissions during construction sufficient to violate applicable air quality standards, or emissions would contribute substantially to an existing or projected air quality violation. Implementation of Mitigation Measure 3.4-1 would effectively reduce fugitive dust emissions (i.e., particulate matter less than or equal to 10 microns in diameter [PM_{10}]) by 75% and would reduce emissions of reactive organic gases (ROG), oxides of nitrogen (NO_X), and PM_{10} from construction equipment by approximately 5%. Although the implementation of Mitigation Measure 3.4-1 would reduce fugitive dust emissions to a less-than-significant level, daily construction emissions of precursors to ozone (ROG and NO_X) would still exceed the Yolo-Solano Air Quality Management District's (YSAQMD's) significance thresholds and thus would potentially result in or substantially contribute to pollutant concentrations that exceed the national ambient air quality standards and the California ambient air quality standards. Thus, implementing the proposed project would result in a significant and unavoidable adverse impact with respect to construction emissions.

As indicated in the discussion of Impact 3.4-2, implementation of the proposed project would result in the long-term operation-related emissions sufficient to violate applicable air quality standards, or emissions would contribute substantially to an existing or projected air quality violation. With implementation of Mitigation Measure 3.4-2, long-term regional emissions associated with the proposed project would be reduced by approximately 3%. Most of the design measures available to reduce operational emissions, such as planning high-density mixed uses within 0.25 mile of existing transit, are already incorporated into the project. A reduction of 3%, however, is, not sufficient to reduce emission levels below the YSAQMD-recommended significance threshold of 82 pounds per day for ROG and 82 pounds per day for NO_X. Thus, implementing the proposed project would result in a significant and unavoidable adverse impact with respect to operational emissions.

7.1.4 NOISE AND VIBRATION

As indicated in Section 3.5, "Noise and Vibration," in the discussion of Impact 3.5-1, it is anticipated that implementing the proposed project would result in construction noise levels that exceed the standards of the City of West Sacramento Noise Ordinance. Although implementation of Mitigation Measure 3.5-1 would reduce exposure to construction noise at nearby sensitive receptors, construction noise levels could still exceed the standards established by the City of West Sacramento Municipal Code. For instance, a pile driver properly fitted with feasible noise controls would generate approximately 83 dBA (A-weighted decibels) at a distance of 200 feet, and a temporary sound wall would not provide more than an additional 10 dBA of noise reduction. Thus, the noise generated by pile driving would exceed the City's 70 dBA L_{max} (maximum noise level) standard during daytime hours. Other equipment, such as dozers, loaders, and backhoes, could individually generate noise levels of 63 dBA at 200 feet, which is above the City's daytime hourly noise standard for nontransportation sources.

Thus, implementing the proposed project could result in a significant and unavoidable adverse impact with respect to construction noise.

As stated in the discussion of Impact 3.5-5, it is anticipated that following implementation of the project, some sensitive receptors proposed on the project site could be exposed to noise levels generated by freeway traffic and traffic on local roads and events at Raley Field that exceed applicable noise standards. Implementation of Mitigation Measure 3.5-5 would be effective in reducing interior noise levels of new development to less-than-significant levels. Design considerations for the purpose of reducing exposure to exterior noise levels, however, may not always be considered feasible. For instance, setbacks from local roads may be impractical because of the project's high density. Also, balconies with views of the surrounding area may be necessary to interest potential residents, and common outdoor activity areas may not be attractive if mostly enclosed by surrounding structures. Therefore, implementing the proposed project would result in a significant and unavoidable impact with respect to potential exposure of residents to exterior noise levels that exceed the City's applicable standards.

7.1.5 VISUAL RESOURCES

As indicated in Section 3.12, "Visual Resources," in the discussion of Impact 3.12-3, it is anticipated that implementation of the proposed project would substantially alter the visual character of the project site through conversion of undeveloped land to developed urban uses. Such an alteration in the visual character of the project site could be considered a substantial degradation of the visual character. Although this impact would be reduced with implementation of Mitigation Measure 3.12-3, reasonable people may differ as to the aesthetic value of the project site and whether development of additional urban uses in the project area would constitute a substantial degradation of the existing visual character or quality of the site and its surroundings. Therefore, the EIR takes a conservative approach, and the analysis concludes that implementing the proposed project would result in a significant and unavoidable impact with respect to the degradation of the visual character at the project site.

As described for Impact 3.12-5, implementation of the proposed project would create significant shadow impacts on the residences immediately north of the Washington Street property. Mitigation Measure 3.12-5, which would involve substantial changes in building design, would substantially reduce these shadow impacts; however, implementation of such redesigns would make this portion of the proposed project economically infeasible. Because the mitigation to avoid this impact is not feasible, this impact is considered significant and unavoidable.

7.1.6 CUMULATIVE IMPACTS

As indicated in Chapter 5, "Cumulative Impacts," implementing the proposed project would result in direct and indirect cumulatively considerable incremental contributions to significant cumulative impacts related to transportation and circulation, air quality (including the significant impact associated with construction-related NO_x emissions related to expansion of the Sacramento Regional Wastewater Treatment Plant [SRWTP]), noise, public services, public utilities, and visual resources. No feasible mitigation is available to reduce these significant cumulative impacts to less-than-significant levels. Because these impacts are a product of cumulative growth, and because no feasible mitigation is available to reduce these impacts to less-than-significant levels, these significant impacts cannot be avoided and thus represent significant and unavoidable adverse impacts.

7.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL IMPACTS

7.2.1 INTRODUCTION

Section 15126.2(c) of the State CEQA Guidelines requires that EIRs include a discussion of significant irreversible environmental changes that could occur with implementation of a project. As described in the guidelines:

> [u]ses 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. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Natural resources include minerals, energy, land, water, forests, and biota. Nonrenewable resources are those natural resources that cannot be replenished by natural means, including oil, natural gas, and iron ore. Renewable natural resources are those resources that can be replenished by natural means, including water, lumber, and soil.

7.2.2 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

Although implementing the proposed project would require the use of both renewable and nonrenewable resources for project construction (e.g., lumber, soil, metals, electricity, natural gas, diesel), this use would not measurably increase the overall rate of use of any natural resources in the region or result in the substantial depletion of nonrenewable resources.

The proposed project would not convert existing farmland, mineral resource areas, or significant open space to urban uses. The project involves converting to urban uses a relatively small amount (approximately 18 acres) of vacant land, almost one-third of which currently serves as a gravel parking lot. The site includes a stand of remnant riparian forest and may contain foraging and nesting habitat for special-status species. However, the proposed project represents development that has been planned for by the *West Sacramento General Plan*, the *Washington Specific Plan*, and other planning documents that apply to the area. Implementing the proposed project could encourage the conservation of farmland, open space, mineral resource areas, and other natural areas by accommodating development in an existing urban core rather than through urban sprawl. The proposed project thus would not commit future generations to significant irreversible changes.

The proposed project would provide for more intensive development in the project area, which would create an incremental increase in demand for water supply and drainage, as well as water and wastewater treatment and conveyance infrastructure capacity. However, this intensification of land uses can be accommodated by the City's available water supply and is anticipated in the area's existing public utilities infrastructure and the planned expansion of the SRWTP. Therefore, the proposed project would not commit existing uses to future water supply shortages or to future drainage, water, and wastewater treatment and conveyance capacity problems.

Lastly, the proposed project is not anticipated to result in irreversible damage from environmental accidents, such as an accidental spill or explosion of a hazardous material. The proposed project is not a large industrial project where large amounts of hazardous, flammable, or explosive materials would be used. Furthermore, although fuel and hazardous materials would be used during the construction and operation of uses under the proposed project, the use, storage, transport, and disposal of hazardous substances are strictly regulated and enforced by various local and regional agencies. Compliance with these regulations would preclude significant project impacts related to environmental accidents.

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10 ACRONYMNS AND OTHER ABBREVIATIONS

°F	degrees Fahrenheit
µg/L	micrograms per liter
$\mu g/m^3$	micro grams per cubic meter
µS/cm	microsiemens per centimeter
AB	assembly bill
ACHP	Advisory Council on Historic Preservation
ACTM	Airborne Toxics Control Measure
ADT	average daily traffic
AEP	annual exceedance probability
afy	acre-feet per year
amsl	above mean sea level
ANSI	American National Standards Institute
APN	assessor's parcel number
AQAP	Air Quality Attainment Plan
ARB	California Air Resources Board
AST	Aboveground fuel storage tank
ASTM	American Society for Testing and Materials
BACT	best available control technology for toxics
Basin Plan	Water Quality Control Plan for the Sacramento-San Joaquin River Basins
BMPs	best management practices
BTEX	benzene, toluene, xylenes, and ethyl benzene
CAA	federal Clean Air Act
CAAA	federal Clean Air Act Amendments
CAAQS	California ambient air quality standards
$CaCO_3$	calcium carbonate
Cal-EPA	California Environmental Protection Agency
Cal-OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CCAA	California Clean Air Act
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHABA	Committee of Hearing, Bio-Acoustics, and Bio-Mechanics
CHRIS	California Historical Resources Information System
City	City of West Sacramento
CIWMA	California Integrated Waste Management Act
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society

CO	carbon monoxide
CRHR	California Register of Historical Resources
CTR	California Toxics Rule
CVP	Central Valley Project
CWA	Clean Water Act
dB	decibel
dBA	A-weighted dB
DBH	diameter at breast height
DD	doubling of distance
DEIR	draft environmental impact report
DFG	California Department of Fish and Game
diesel PM	particulate exhaust emissions from diesel-fueled engines
DO	dissolved oxygen
DPR	California Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EC	electrical conductivity
EHD	Environmental Health Division
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
ESAs	environmental site assessments
FEIR	final environmental impact report
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIP	Federal Implementation Plan
FIRMs	Flood Insurance Rate Maps
FTA	Federal Transit Administration
General Plan	West Sacramento General Plan
gpm	gallons per minute
HAPs	hazardous air pollutants
HCD	California Department of Housing and Community Development
HCP	habitat conservation plan
HVAC	heating, ventilation, and air conditioning
HWCL	Hazardous Waste Control Law
Hz	hertz
I-5	Interstate 5
I-80	Interstate 80
IESNA	Illuminating Engineers Society of North America
in/sec	inch per second

IS	initial study
ITE	Institute of Transportation Engineers
KSF	1,000 square feet
kV	kilovolt
kWh	million kilowatt-hours
La	Lang sandy loam
LAFCo	Sacramento Local Agency Formation Commission
lbs/day	pounds per day
L_{dn}	day-night noise level
L_{eq}	equivalent noise level
L_{max}	maximum noise level
L_{min}	minimum noise level
LNWI	Lower Northwest Interceptor
LOS	loss of service
LOX	liquid oxygen
L_X	Statistical description: The noise level exceeded X percent of a specific period of time.
MACT	maximum available control technology for toxics
MCE	maximum credible earthquake
MCL	Maximum Contaminant Level
MEI	Maximally Exposed Individual
mgd	million gallons per day
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MLD	Most Likely Descendent
MRL	method reporting limit
MRZ	Mineral Resource Zone
MS4	NPDES General Permit for Small Municipal Separate Storm Sewer System
MTBE	methyl tertiary-butyl ether
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NC	Neighborhood Commercial
NCCP	California Natural Communities Conservation Planning
NCIC	North Central Information Center
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NESHAP	national emissions standards for HAPs
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
ng/L	nanograms per liter
NO	nitric oxide
NOAA Fisheries	National Oceanic and Atmospheric Administration – Fisheries
NOI	notice of intent
NOP	notice of preparation

NO_X	oxides of nitrogen
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
OAP	Ozone Attainment Plan
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OPR	California Governor’s Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PAH	polycyclic aromatic hydrocarbons
PD-30	Planned Development Ordinance – 30
perc	perchloroethylene
PG&E	Pacific Gas and Electric Company
PM	particulate matter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
PM_{10}	particulate matter less than or equal to 10 microns in diameter
ppm	parts per million
PRC	Public Resources Code
PPV	peak particle velocity
psi	pounds per square inch
RCRA	Resource Conservation and Recovery Act
RD 811	Reclamation District 811
RD 900	Reclamation District 900
regional water board	regional water quality control board
REC	recognized environmental condition
RMS	root mean squared
RMU	Riverfront Mixed Use
ROG	reactive organic gas
RT	Regional Transit
SACOG	Sacramento Area Council of Governments
SB	Senate bill
SDWA	Safe Drinking Water Act
SEL	single event [impulsive] noise level
SIP	State Implementation Policy
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utilities District
So	Sycamore silt loam
SO_2	sulfur dioxide
SR	State Route
SRWP	Sacramento River Watershed Program
SRWTP	Sacramento Regional Wastewater Treatment Plant
State CEQA Guidelines	California Environmental Quality Act Guidelines
State Water Board	State Water Resources Control Board

STLC	soluble threshold limit concentration
SVAB	Sacramento Valley Air Basin
SWMP	stormwater management program
SWPPP	storm water pollution prevention plan
TACs	toxic air contaminants
TCRs	transportation concept reports
TDS	total dissolved solids
Terrasearch	TERRASEARCH, Inc
TMDL	total maximum daily load
TPHs	total petroleum hydrocarbons
TPY	tons per year
TSM	Transportation System Management
UBC	Uniform Building Code
UPRR	Union Pacific Railroad
U.S. 50	U.S. Highway 50
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VdB	vibration decibels
VELB	valley elderberry longhorn beetle
VMT	vehicle miles traveled
VOCs	volatile organic compounds
WDRs	waste discharge requirements
WF	Waterfront
WKA	Wallace Kuhl & Associates, Inc.
WUSD	Washington Unified School District
WWTP	West Sacramento Wastewater Treatment Plant
YSAQMD	Yolo-Solano Air Quality Management District

APPENDIX A

NOP AND COMMENTS ON THE NOP

NOP

CITY OF
WEST SACRAMENTO

CITY HALL
1110 West Capitol Avenue
West Sacramento, CA 95691

City Council
City Manager
City Clerk
Human Resources
(916) 617-4500
Fax (916) 372-8765

Information Technology
(916) 617-4520
Fax (916) 372-8765

Community Development
Planning
Engineering
(916) 617-4645
Fax (916) 371-0845

Building
(916) 617-4683
Fax (916) 371-0845

Parks & Recreation
(916) 617-4620
Fax (916) 372-5329

Redevelopment
Economic Development
(916) 617-4535
Fax (916) 373-5848

Grants & Community Investment
(916) 617-4555
Fax (916) 372-1584

Finance
(916) 617-4575
Fax (916) 373-9006

Utilities
(916) 617-4589
Fax (916) 373-9006

Refuse & Recycling
(916) 617-4590
Fax (916) 373-9006

Fire Administration
(916) 617-4600
Fax (916) 371-5017

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Police
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Fax (916) 373-2377
Code Enforcement
(916) 617-4927

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1951 South River Road
West Sacramento, CA 95691

(916) 617-4850
Fax (916) 371-1516

www.ci.west-sacramento.ca.us

DATE: April 18, 2005

TO: Responsible Agencies, Trustee Agencies, and Interested Persons

FROM: City of West Sacramento
Community Development Department
1110 West Capitol Avenue
West Sacramento, CA 95691

SUBJECT: **Notice of Preparation of a Draft Environmental Impact Report for the Raley's Landing Project**

SCOPING PERIOD: April 18, 2005 - May 18, 2005

The City of West Sacramento will be the lead agency and will prepare an environmental impact report (EIR) for the Raley's Landing project. We need to know the views of your agency regarding the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are described in the attached initial study. The initial study provides information concerning the intended land uses and location of the proposed project, including a description of probable environmental effects.

Because of the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Jim Bermudez at the address shown above. Include in your response the name of a contact person for your agency.

An agency scoping meeting will be held from 3:00 p.m. to 4:00 p.m. on April 27, 2005, at the West Sacramento Civic Center Galleria, 1110 West Capitol Avenue, West Sacramento, CA 95691. A public scoping meeting will be held from 6:00 p.m. to 7:00 p.m. on the same date and at the same location.

Reference: California Code of Regulations, Title 14 (State CEQA Guidelines) Sections 15082(a), 15103, 15375.

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The City of West Sacramento will be the lead agency and will prepare an environmental impact report (EIR) for the Raley's Landing project. We need to know the views of your agency regarding the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are described in the attached initial study. The initial study provides information concerning the intended land uses and location of the proposed project, including a description of probable environmental effects.

Because of the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Jim Bermudez at the address shown above. Include in your response the name of a contact person for your agency.

An agency scoping meeting will be held from 3:00 p.m. to 4:00 p.m. on April 27, 2005, at the West Sacramento Civic Center Galleria, 1110 West Capitol Avenue, West Sacramento, CA 95691. A public scoping meeting will be held from 6:00 p.m. to 7:00 p.m. on the same date and at the same location.

Reference: California Code of Regulations, Title 14 (State CEQA Guidelines) Sections 15082(a), 15103, 15375.

CITY OF WEST SACRAMENTO

Initial Study
Environmental Checklist Form

1.	Project title:	Raley's Landing Development Agreement and Planned Development – 30 (PD-30) Amendments
2.	Lead agency name and address:	City of West Sacramento Community Development Department 1110 West Capitol Avenue West Sacramento, CA 95691
3.	Contact person and phone number:	Jim Bermudez Associate Planner Community Development Department (916) 617-4645
4.	Project location:	Raley's Landing and Washington Street properties, approximately 2nd and G Street, West Sacramento
5.	Project sponsor's name and address:	City of West Sacramento 1110 West Capitol Avenue West Sacramento, CA 95691
6.	General plan designation:	Riverfront Mixed Use (RMU)
7.	Zoning:	Waterfront Commercial (WF) with a PD-43 (Washington Specific Plan) overlay, Waterfront Commercial (WF) with a PD-30 and PD-43 (Washington Specific Plan) overlay. The PD-30 overlay is encumbered by the Raley's Landing Development Agreement.

8. Description of project: The City of West Sacramento proposes to amend the Raley's Landing Development Agreement and PD-30 text to create a mixed-use development consisting of residential, commercial, office, and open space features oriented toward the Sacramento River waterfront to the east and West Capitol Avenue to the south. The development, located in the northeastern portion of the city (**Exhibit 1**), would occupy 18.55 acres bordered by the Sacramento River on the east; Fifth, Fourth, and Third Streets on the west; West Capitol Avenue on the south; and E and G Streets on the north (**Exhibit 2**). At buildout, the proposed project would contain approximately 900 residential units, 845,000 gross square feet of office space, 86,000 square feet of commercial/retail uses, and possibly 100–300 hotel rooms with a 7,000- to 15,000-square-foot conference center; it would provide between 4,352 and 4,652 on-site parking spaces, including surface and multilevel parking spaces.

The proposed project is divided into four development areas: Washington Street, River 1, River 2, and River 3. The project components would be incorporated into these four areas as follows:

Washington Street: This area, identified as the Washington Street property, is bordered generally by G Street on the north, 3rd Street on the east, West Capitol Avenue on the south, and Fifth Street on the west. It is a planned mixed-use area combining retail and residential uses. Development on this property would be primarily residential, with 6.63 acres proposed for development of approximately 550 residential units in three phases. At buildout, the property would have 900–1,000 off-street parking spaces and a total of 24,000 square feet (0.81 acre) of retail uses.

River 1: The River 1 area is bordered by an existing office building on the north, the Sacramento River on the east, the State Route 275 (SR 275) exit for West Capitol Avenue on the south, and Third Street on the west. This 4.58-acre parcel would be developed with a mixture of commercial, residential, and retail uses, including approximately 245,000 square feet of office space (1.59 acres), 42,000 square feet of retail/restaurant uses (1.20 acres), and one of the following two scenarios: 200 residential units (1.79 acres) **or** 100 residential units (0.34 acre) and a 100- to 300-room hotel with a 7,000- to 15,000-square-foot conference center (1.45 acres). Between 1,000 and 1,200 parking spaces would be provided in the River 1 area.

River 2: The River 2 area is bordered by F Street on the north, the Sacramento River on the east, an existing office building on the south, and Second Street on the west. Proposed development in the 1.03-acre River 2 area includes approximately 150 residential units and approximately 252 parking spaces.

River 3: The River 3 area is bordered by E Street on the north, the Sacramento River on the east, F Street on the south, and Third Street on the west. Proposed development in the 5.5-acre River 3 area includes approximately 600,000 gross square feet of office space, 20,000 gross square feet of commercial space, and 2,200 parking spaces.

9. Surrounding land uses and setting: The proposed project site is bordered by the Sacramento River levee on the east; Fifth, Fourth, and Third Streets on the west; West Capitol Avenue on the south; and E and G Streets on the north. It is located entirely in the approximately 190-acre Washington Specific Plan Area, the intended focal point of West Sacramento's riverfront development. An 11-story, 400,000-square-foot office building and a six-story parking garage are located between the River 1 area and the River 2 and River 3 areas. Raley Field is located south of the project site, across West Capitol Avenue. The surrounding uses and current zoning are as follows:

Adjacent Properties:

North: **Use**: High-Density Residential, Riverfront Mixed Use
Zoning: Residential: Multi-Family (R-3) with a PD-43 (Washington Specific Plan) overlay, Waterfront Commercial (WF) with a PD-43 overlay

South: **Use**: Riverfront Mixed Use
Zoning: Waterfront Commercial (WF) with a PD-41 overlay

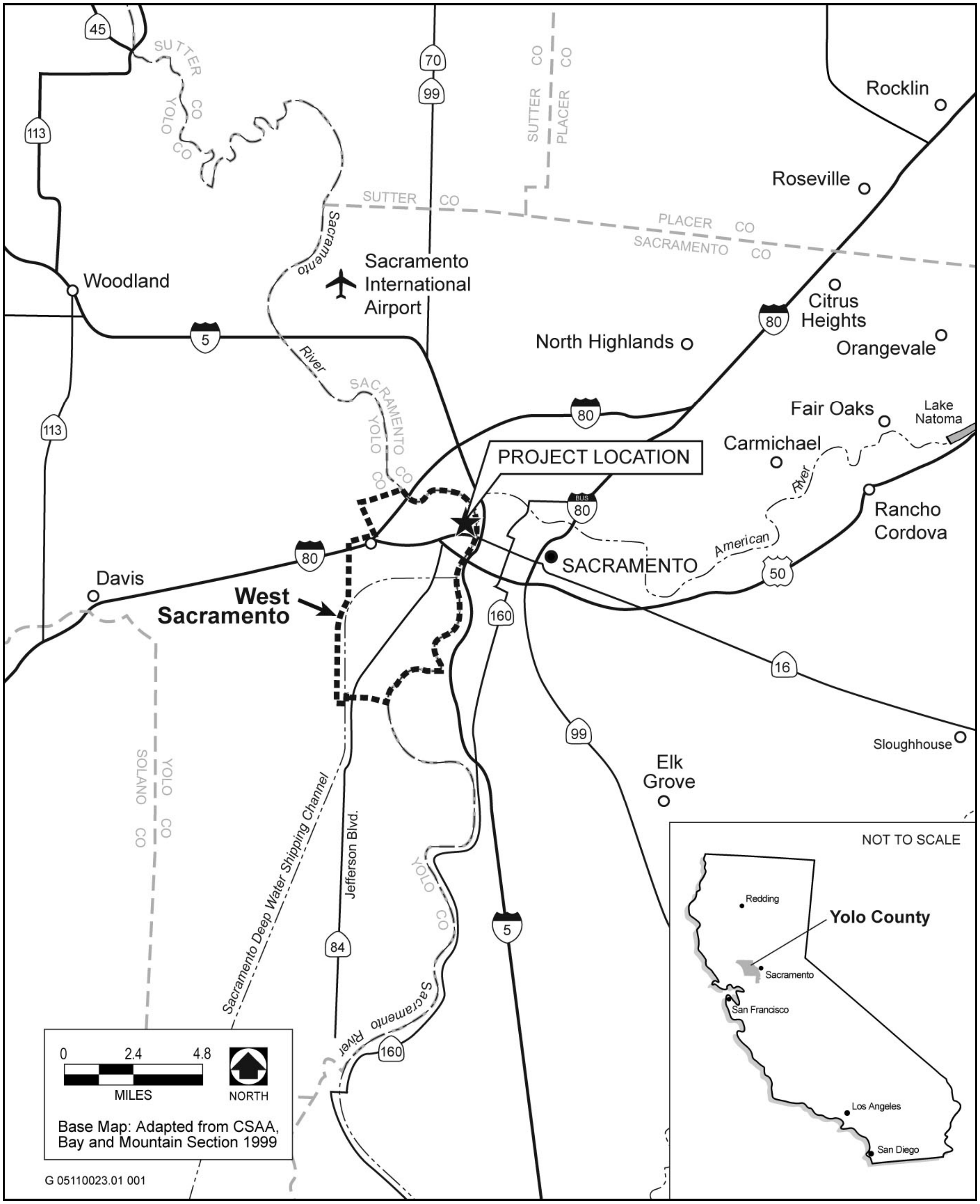
East: **Use**: Sacramento River
Zoning: None

West: **Use**: High-Density Residential, Riverfront Mixed Use
Zoning: Waterfront Commercial (WF) with a PD-43 overlay, Waterfront (WF) with a PD-30 and PD-43 overlay, Residential: Duplex (R-2) with a PD-43 overlay

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

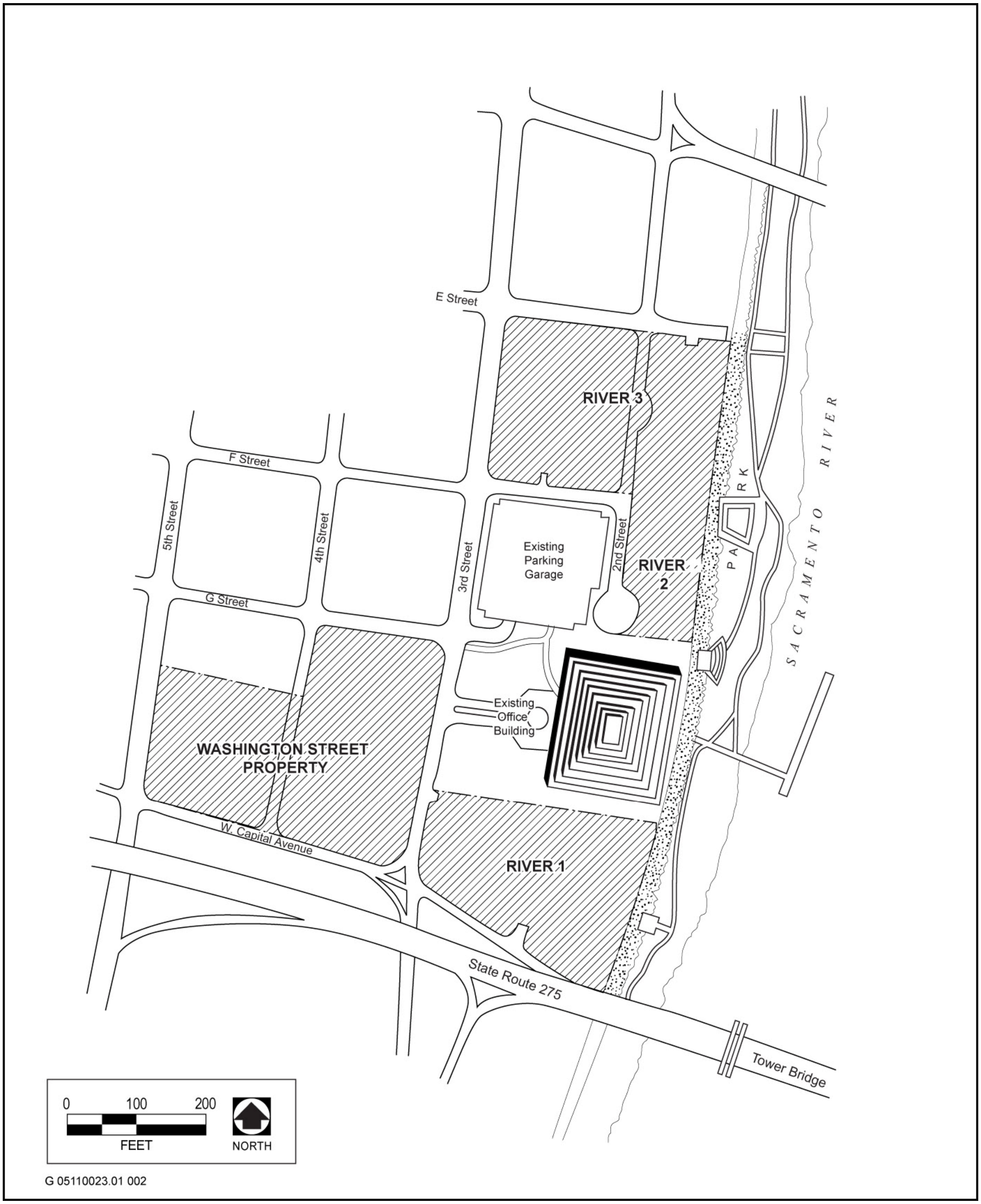
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☒ Aesthetics	☐ Agricultural Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology / Soils
☒ Hazards & Hazardous Materials	☒ Hydrology / Water Quality	☒ Land Use / Planning
☐ Mineral Resources	☒ Noise	☒ Population / Housing
☒ Public Services	☒ Recreation	☒ Transportation / Traffic
☒ Utilities / Service Systems	☒ Mandatory Findings of Significance	



EDAW 2005

Regional Location of Raley's Landing Project **Exhibit 1**



EDAW 2005

Raley's Landing Project Location Site **Exhibit 2**

DETERMINATION:

On behalf of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environmental, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in a earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to the earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Planner's Signature	Date
Planner's Printed name	For

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the projects outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, and EIR is required.

4) "Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). Earlier analyses are discussed in Section XVII at the end of the checklist.

I. AESTHETICS – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

a, b) The Raley's Landing project site consists of undeveloped parcels in a partially developed area of West Sacramento. The Washington Street property parcels are used as parking areas for events at Raley Field and have little vegetation. The River 1, 2, and 3 parcels contain ruderal vegetation and scattered ornamental and native tree species. Surrounding land uses consist of residences, limited commercial facilities, the River Walk parkway along the west bank of the Sacramento River, an 11-story office building, and a six-story parking garage. The Raley's Landing site and surrounding area are not part of a scenic vista. The project site is not located near a state scenic highway and contains no scenic resources (e.g., trees, rock outcroppings, historic buildings) within view of a state scenic highway. Development of the site would have **no impact** on a scenic vista or scenic resources as described in items (a) and (b) in the checklist above.

c) The Raley's Landing project site is located along the western bank of the Sacramento River and is highly visible from area roadways and downtown Sacramento. The most prominent existing visual element in the immediate project vicinity is an 11-story office building and associated six-story parking garage, located on parcels adjacent to the project site. Development of the project, which would involve construction of medium-rise buildings and possibly a high-rise building, would undergo environmental review to ensure that it complies with the Raley's Landing Development Agreement, Washington Specific Plan, West Sacramento General Plan, and Zoning Ordinance, as well as applicable local, county, state, and federal laws and regulations addressing aesthetics. Although the project area is already partially developed with highly visible structures, and although project development is expected to comply with a variety of plans, laws, and regulations regarding aesthetics, implementing the proposed project would place new structures on currently undeveloped parcels that would be highly visible from a variety of vantage points. Because construction of such structures could be perceived as substantially degrading the existing visual character or quality of the site and its surroundings, this impact is considered **potentially significant** and will be analyzed further in the EIR.

d) Implementation of the proposed project would involve construction of structures that could, because of the use of glass and other reflective materials, be sources of daytime glare in the area. Glare can create hazards to motorists and a nuisance to pedestrians, bicyclists, and surrounding land uses. Installation of lighting fixtures could increase the amount of nighttime lighting in the area, which could cause problems similar to those described for daytime glare and could disturb nearby residents in their homes. Because implementing the project could introduce or create a new source of substantial light or glare, potential impacts associated with this issue would be **potentially significant**. This impact will be analyzed further in the EIR.

II. AGRICULTURAL RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use?	☐	☐	☐	☒

a–c) The Raley's Landing project site is located in the city of West Sacramento. This area does not contain agricultural land or undeveloped land that has been recently used for agricultural purposes, nor is it located directly adjacent to any agricultural land. The project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program (California Department of Conservation, Division of Land Resource Protection 2002) and is not under Williamson Act contracts. Therefore, the proposed project would have **no impact** on agricultural resources. This issue will not be analyzed further in the EIR.

III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

a) The Raley's Landing project site is located in the Sacramento Valley Air Basin (SVAB), within the jurisdiction of the Yolo-Solano Air Quality Management District (YSAQMD). The YSAQMD is the primary local agency with respect to air quality for all of Yolo County and northeastern Solano County and administers local, state, and federal air quality management programs for these areas. Yolo County is currently in nonattainment for state and federal ozone standards and state standards for particulate matter less than 10 microns in diameter (PM_{10}).

As is typical for relatively large construction projects, movement of equipment and wind over bare soils could generate airborne dust. Construction equipment would emit exhaust, including ozone precursors, particulate matter, and air toxics. In addition, implementing the project would result in additional traffic in West Sacramento and the surrounding roadway network, resulting in increased emissions of ozone precursors. Potential increases in traffic congestion at particular intersections also could increase localized carbon monoxide concentrations. Although carbon monoxide emissions from individual vehicles are decreasing because of vehicle emission regulations, the project could contribute to carbon monoxide levels at congested roadways that exceed state or federal standards or both.

Construction activities and additional traffic on local roadways related to the Raley's Landing project could cause increased emissions of ozone precursors, which could conflict with or obstruct implementation of the YSAQMD's air quality plan. Both vehicular traffic and construction activities related to the project could exacerbate nonattainment status for PM_{10}. These air quality impacts are considered **potentially significant** and will be addressed in the EIR.

b) The Raley's Landing project would generate both short-term and long-term emissions. Each of these is discussed below.

Short-Term Increases in Regional Emissions

Emissions produced during site preparation and construction are short-term increases in regional emissions because they occur only during the construction phase. Dust generation usually is the primary concern during initial site preparation. Because such emissions are not amenable to collection and discharge through a controlled source, they are called “fugitive emissions.” Fugitive dust emissions typically include emissions from on-site grading and excavation activities and from off-site truck and passenger car travel on unpaved roadways. Fugitive dust emission rates are affected by a variety of factors, including amount of soil silt, amount of soil moisture, wind speed, the size of the area disturbed, the number of vehicles, the depth of disturbance or excavation, and the number of vehicle miles traveled. Emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_X) are generated primarily by the operation of gasoline- and diesel-powered motor vehicles. Construction-generated emissions vary from day to day, depending on the specific activities being conducted, the type of equipment, the duration of equipment use, and the number of transport trips for people and material.

Actual pollutant concentrations would depend on various factors, including the location and type of activities performed, meteorological conditions, distances to nearby receptors, and the effectiveness of the mitigation measures employed. The proposed project would include construction activities that could result in short-term increases in regional pollutants that could adversely affect nearby sensitive receptors, violate air quality standards, and contribute to existing air quality violations. Because the air quality impacts from construction activities are considered **potentially significant**, the emission of air pollutants from construction activities will be analyzed further in the EIR.

Long-Term Increases in Regional Emissions

Long-term increases in regional emissions of criteria pollutants would be associated primarily with motor vehicle trips and patterns following plan completion. “Criteria” pollutants are those pollutants (or their precursors) for which the U.S. Environmental Protection Agency (EPA) has established national ambient air quality standards (NAAQS). California has established its own ambient air quality standards, which are at least as stringent as the NAAQS. Implementation of the Raley’s Landing project is not expected to generate any substantial stationary source emissions (i.e., no heavy industrial facilities, power plants, wastewater treatment plants, or other major stationary source emitters are proposed); therefore, this issue will not be addressed in the EIR. However, the proposed project would generate mobile source emissions, including ROG and NO_X, which are both precursors to ozone, and carbon monoxide (CO). These mobile source emissions could potentially violate air quality standards or contribute to existing or projected air quality violations. Because this impact is considered **potentially significant**, the EIR will evaluate the projected mobile source emissions resulting from implementation of the proposed project.

c) Yolo County is currently designated a nonattainment area for the state and federal ozone standards and state standards for PM_{10}. In July 1997, the EPA adopted a new national ambient air quality standard for finer particulate matter—particulate matter of 2.5 microns or less in diameter ($PM_{2.5}$)—to be used in conjunction with the national PM_{10} standard. To date, no attainment status designations have been adopted for the national $PM_{2.5}$ standard.

Implementing the proposed project could result in short-term and long-term increases in regional criteria pollutants. Increases in project-generated emissions could result in a cumulatively considerable net increase of criteria pollutants for which the region is designated nonattainment. As a result, this impact is considered **potentially significant** and will be evaluated further in the EIR.

d) One of the most important reasons for air quality regulations and standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed “sensitive receptors.” The term “sensitive receptors” refers both to specific population groups and to the land uses where they would be located for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, child care centers, retirement or convalescent homes, hospitals, and clinics.

Implementing the proposed project could result in short-term and long-term increases in mobile-, stationary-, and area-source emissions, which could lead to substantial increases in pollutant concentrations at nearby residences. As a result, this impact is considered **potentially significant** and will be evaluated further in the EIR.

e) The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. Although offensive odors rarely cause physical harm, they can still lead to considerable distress among the public and often generate citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

Construction activities associated with the Raley's Landing project could include the application of architectural coatings and asphalt paving materials that could generate localized temporary odors. The use of diesel-powered construction equipment also could generate localized temporary odors. However, no heavy industrial facilities, power plants, wastewater treatment plants, or other large odor emitters are proposed for the project. Therefore, the project would not be expected to create objectionable odors affecting a substantial number of people. Because this impact is considered **less than significant**, this issue will not be evaluated further in the EIR.

IV. BIOLOGICAL RESOURCES – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native residents or migratory wildlife corridors or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

a) Sensitive biological resources are those protected by federal, state, or local resource conservation agencies and organizations. Although the project site is located in an urban area, the project would be located on undeveloped parcels containing ruderal vegetation and scattered ornamental and native tree species. Previous surveys have identified the presence of elderberry shrubs on the project site. Elderberry shrubs are the host plant for the valley elderberry longhorn beetle, which is federally listed as threatened. The project site also includes trees that have the potential to provide nesting habitat for raptors, such as Swainson's hawk. The Swainson's hawk is federally listed as a species of special concern and is state listed as threatened. Development associated with the proposed project would require removal of at least a portion of the trees and elderberry shrubs. Because project implementation could result in adverse impacts on candidate, sensitive, or special-status plant and animal species, these impacts are considered **potentially significant** and will be analyzed further in the EIR.

b) Although the proposed project is bordered by the Sacramento River waterfront, no portion of the proposed project is located on the river side of the levee. All project activities would be located west of the levee and no riparian habitat or sensitive natural communities are known to occur on the project site. Therefore, implementing the proposed project would have **no impact** on riparian habitat or sensitive natural communities. This issue will not be analyzed further in the EIR.

c) No wetlands are located on the project site, and no project-related activities would be conducted on the river side of the Sacramento River levee. Therefore, the levee would provide a topographical and hydrologic separation between the river and the project site. Implementing the project would have **no impact** on wetlands, so this issue will not be analyzed further in the EIR.

d) The Raley's Landing project site is located on undeveloped parcels in a partially developed area of West Sacramento. Each parcel is bordered by roads, residences, an office building, or similar development on at least three sides. There are no contiguous areas of significant wildlife habitat in the project vicinity, and the project sites do not provide a connection between any wildlife habitat areas. No wildlife corridors or native wildlife nursery sites are located on the project site, so implementing the project would not interfere with the movement of any native resident or migratory fish or wildlife species or with established native residents or migratory wildlife corridors and it would not impede the use of native wildlife nursery sites. Because the project would have **no impact** on these resources, this issue will not be analyzed further in the EIR.

e) The City of West Sacramento Municipal Code (Chapter 8.24, Tree Preservation) addresses the removal and preservation of street trees, heritage trees, significant trees, and landmark trees on private and public property in the city. Trees on the project site likely fall within at least one of these categories. For analysis purposes, it is assumed that all the trees located on the project site would be removed during construction of the project. Therefore, implementing the project could conflict with the City's tree preservation policy. This impact is considered **potentially significant** and will be analyzed further in the EIR.

f) In 1991, Yolo County and its member cities began to develop a habitat conservation plan (HCP) to obtain incidental take authorization under Section 10(a)(1)(B) of the federal Endangered Species Act. In 2001, the participating jurisdictions agreed with a request from the California Department of Fish and Game to extend the planning process so that the HCP could be rewritten as a natural community conservation plan (NCCP). The process of preparing the NCCP is underway (White, pers. comm., 2004). Because the NCCP has not yet been adopted, the project would have **no impact** on it. However, because NCCP preparation is under way, this issue will be analyzed further in the EIR.

V. CULTURAL RESOURCES – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☒	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☒	☐	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☒	☐	☐	☐

a, b, d) Records at the Northwest Information Center of the California Historical Resources Information System have not yet been consulted to determine whether the project site contains listed historical resource, archaeological resource, or human remain sites. Therefore, the presence of listed historical resources, archaeological resources, or human remains cannot be ruled out at this time. In addition, the project site may contain previously undiscovered or unrecorded historical resources, archaeological resources, and human remains.

No historic structures are located on the project site; however, because historic structures are known to exist in the project vicinity, there is the potential during project construction to discover subsurface structures, facilities, and artifacts associated with the area's history. Prehistoric occupation sites typically are located near watercourses, so the project area, which is located along the Sacramento River, is considered potentially sensitive for cultural resources. Because development associated with the proposed project has the potential to disturb historical resources, archaeological resources, and human remains in the project area, the project's potential impacts on historical and archaeological resources are considered **potentially significant** and will be analyzed further in the EIR.

c) The proposed project site is underlain by Holocene-age levee channel and basin deposits. These deposits are less than 10,000 years old. By definition, an object must be more than 10,000 years old to be considered a fossil; therefore, it is highly unlikely that deposits underlying the project site contain unique paleontological resources. In addition, the site is generally flat and does not contain unique geologic features. Therefore, the proposed project would have a **less-than-significant** impact; however, for the purposes of public disclosure, this issue will be analyzed further in the EIR.

VI. GEOLOGY AND SOILS – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects 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 Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known Fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
b) Expose people or structures to potential substantial adverse effects including the risk of loss injury, or death involving strong seismic ground shaking?	☒	☐	☐	☐
c) Expose people or structures to potential substantial adverse effects including the risk of loss injury, or death involving seismic-related ground failure, including liquefaction?	☒	☐	☐	☐
d) Expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death involving landslides?	☐	☐	☐	☒
e) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
f) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☒	☐	☐	☐
g) Be located on expansive soil, as defined in Table 18-1-B of the uniform Building Code (1994), creating substantial risks to life or property?	☒	☐	☐	☐
h) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

a) Known or inferred earthquake faults or Alquist-Priolo Special Studies Zones do not exist in or adjacent to West Sacramento. Therefore, the proposed project site would not be subject to fault rupture, and **no impact** would occur.

b) Although known or inferred earthquake faults or Alquist-Priolo Special Studies Zones do not exist in or adjacent to the city of West Sacramento, several faults exist within 100 miles of the city. The greatest intensity earthquake effects would be expected from the Dunnigan Hills fault, the known active fault closest to West Sacramento, located approximately 30 miles away. Other known active faults within 100 miles of the city are Marsh Creek/Greenville (40 miles to the southwest), Green Valley (50 miles to the southwest), Concord (50 miles to the southwest), West Napa (50 miles to the west), Calaveras (70 miles to the southwest), Rodgers Creek (70 miles to the west), Hayward (80 miles to the southwest), and San Andreas (100 miles to the southwest).

The West Sacramento region has experienced a relatively low level of historic seismic activity. Although the project area has not been the source of earthquakes in recent geologic time, it could be affected by seismic activity in neighboring regions. The California Geological Survey indicates that the project area is located in a region of moderate maximum earthquake intensity (a zone of VII to VIII on the Modified Mercalli Scale). Earthquakes in this region would cause general alarm and moderate damage.

The State of California provides minimum standards for building design through the California Building Standards Code (California Code of Regulations, Title 24). Site-specific geotechnical evaluations will be prepared for the project site, and the design of structures proposed for the site would be required to comply with Title 24 of the California Code of Regulations. Although the proposed project would be required to adhere to these construction standards and the seismic risk in West Sacramento is low, the risk associated with construction is considered **potentially significant**, and this issue will be analyzed further in the EIR.

c, f, g) Soils in the Sacramento Valley consist predominantly of sedimentary deposits accumulated over the past 100 million years, beginning with marine deposits and followed in geologically recent times by river deposits (alluvium) carried out of the surrounding mountains. The cumulative thickness of these alluvial deposits underneath West Sacramento is estimated at more than 12,000 feet. Unconsolidated, saturated, clay-free sands and silts, which are commonly found in alluvial deposits, are typically susceptible to damage from ground shaking and ground failure, including soil liquefaction, settlement, lurch cracking, lateral spreading, and slumping. Furthermore, the major soil associations located in West Sacramento characteristically have poor permeability, moderate to high shrink-swell potential, and high water retention capability. These effects and soil characteristics can result in risk of injury or death to people and serious damage to, or destruction of, structures.

The proposed project would comply with Title 24 of the California Code of Regulations, which requires that construction and design of buildings meet standards that would reduce risks associated with subsidence or liquefaction. Because the topography of the site is flat, landslides do not present a hazard in the project area. Site-specific soil and geotechnical investigations would be completed to identify foundation, footing, and other building requirements for the geologic and soil conditions present on the site. Although the project site has a low seismic hazard, and it is flat, the soil has a moderate to high shrink-swell potential, and the project may involve construction of a high-rise structure, which carries inherently greater risk with respect to potential hazards from unstable soil conditions. For these reasons, these soil impacts are considered **potentially significant**, detailed geotechnical studies will be prepared, and these issues will be analyzed further in the EIR.

d) The proposed project site is flat. It does not contain any steep slopes or other features that could lead to landslide or mudflow hazards. Therefore, **no impact** would occur, and this issue will not be analyzed further in the EIR.

e) Construction of the project would require excavation, grading, and compaction, which could result in localized erosion during construction periods. All excavation activities, grading, and construction would be conducted according to standard construction practices and building codes. In addition, the project would be required to comply with conditions of the state’s General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit 99-08-DWQ). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which would contain site maps showing the construction areas, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography before and after construction, and drainage patterns. The SWPPP would identify best management practices (BMPs) that would be used to protect stormwater runoff and minimize erosion during construction (e.g., use of straw bales, sandbags, gravel traps, and filters). For these reasons, implementing the proposed project would result in a **less-than-significant** soil erosion impact. However, for the purposes of public disclosure, this issue will be analyzed further in the EIR.

h) The proposed project would not require the use of septic tanks or alternative wastewater disposal systems. It would be connected to the existing sewer system, and wastewater would be conveyed to and treated at the West Sacramento Wastewater Treatment Plant. Therefore, **no impact** would occur. This issue will not be analyzed further in the EIR.

VII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☒	☐	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working within the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☒	☐	☐	☐
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

a) The proposed project would not involve activities such as industrial or manufacturing uses that could generate hazardous emissions. It would involve the use and storage of small quantities of hazardous materials, such as pesticides, fertilizers, gasoline, and cleaning materials, used at various office, commercial, and residential locations. The routine transport, use, and disposal of such materials would be limited to those typical of these uses and would not be expected to present a health risk when the materials are handled according to manufacturers' instructions. In addition, federal, state, and local regulations apply to every aspect of hazardous materials transport, use, and storage. These regulations are designed to avoid significant hazards to the public and environment. Because only small quantities of hazardous materials are expected to be used on-site and because the use of hazardous materials would be required to comply with all applicable existing regulations concerning these materials, this impact is considered **less than significant**. Therefore, this issue will not be analyzed further in the EIR.

b, d) Implementing the proposed project would involve ground disturbance and excavation. Phase I Environmental Site Assessments (e.g., search of lists of hazardous materials sites pursuant to Government Code Section 65962.5, reconnaissance-level field survey, historic research of past uses of the project area), which would allow for a determination of whether the project area contains listed hazardous materials/waste sites, have not yet been completed for all parcels in the project area. Therefore, currently unrecorded contaminated sites may occur on one or more of the project parcels. The Washington Specific Plan Draft Environmental Impact Report identifies 10 sites of reported hazardous materials contamination in the Washington Specific Plan Area. Two of the sites appear to be located in the Raley's Landing project area: a former gas station site at the corner of West Capitol Avenue and Fifth Street, and a former gas station site on West Capitol Avenue, east of Third Street. Development of the proposed project could disturb existing hazardous materials/waste sites, which could release hazardous materials into the environment. This impact is considered **potentially significant** and will be evaluated in the EIR. Phase I ESAs will be completed for the proposed project parcels as part of this evaluation.

c) The project area is not located within a quarter-mile of any existing or proposed school. Therefore, implementing the proposed project would not create a hazard to schools. Because there would be **no impact**, this issue will not be addressed further in the EIR.

e, f) The project area is not located within 2 miles of an existing public or private airstrip or associated airport land use plan area. The closest airport is Sacramento Executive Airport, located approximately 7 miles southeast of the project area. Therefore, there would be no air safety hazard to people living or working in the project area, and **no impact** would occur. This issue will not be addressed in the EIR.

g) Access to the project site is available from numerous roadways. Implementing the proposed project would involve abandoning the portion of Fourth Street between the western and eastern portions of the Washington Street property and abandoning the portion of Second Street between the western and eastern portions of Site 3. Despite these road closures, the site would remain accessible from several roadways. However, construction activities would cause temporary changes to traffic and circulation, including potential temporary effects on emergency vehicle passage in the project area. This impact is considered **potentially significant**. Therefore, the EIR will include an evaluation of possible interference with emergency response or emergency evacuation.

h) No designated Wildland Fire Areas exist in the Washington Specific Plan Area. The proposed project site is located in a generally developed area on relatively flat terrain and is surrounded by urban uses. No areas of potential wildland fire risk are in the vicinity. Therefore, the proposed project would not be subject to wildland fires, and **no impact** would occur. This issue will not be analyzed further in the EIR.

VIII. HYDROLOGY AND WATER QUALITY –
Would the project:

		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐
b)	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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☒	☐	☐	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☒	☐	☐	☐
e)	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?	☒	☐	☐	☐
f)	Otherwise substantially degrade water quality?	☒	☐	☐	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☒	☐
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☒	☐	☐	☐
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

a) Construction of the proposed Raley’s Landing project would create the potential for increased erosion and sedimentation association with stormwater runoff. Urban contaminants, such as oil, grease, heavy metals, and pesticides and herbicides from proposed development, also could be present in runoff. Sediments and other contaminants could ultimately be discharged to the Sacramento River through the storm drain system or could migrate to groundwater through infiltration, which could violate water quality standards or waste discharge requirements.

West Sacramento is located in the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). In August 1999, the State Water Resources Control Board (SWRCB) adopted a statewide general National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges associated with construction activity. Performance standards for obtaining and complying with the general permit are described in NPDES General Permit No. CAS000002, Waste Discharge Requirements, Order No. 99-08-DWQ. The General Permit was modified in April 2001 (SWRCB Resolution No. 2001-046) to require permittees to implement specific sampling and analytical procedures to determine the effectiveness of BMPs used at construction sites. Under the general permit, the state requires that any construction activity affecting 1 acre or more obtain a General Construction Activity Stormwater Permit Waste Discharge Identification Number.

Site-specific erosion and sedimentation control plans would be developed to demonstrate how the project would reduce the potential for contaminants to enter receiving waters. Project construction and erosion control measures, including revegetation of disturbed areas and avoidance of grading activities during storm events, would be implemented. BMPs to be implemented could include stormwater inlet protection measures, such as the use of straw bales, sandbags, gravel traps, and filters; erosion control measures, such as vegetation and physical stabilization; and sediment control measures, such as fences, dams, barriers, berms, traps, and basins.

Construction of the proposed project could result in impacts on water quality that are considered **potentially significant**; therefore, this issue will be analyzed further in the EIR.

b) The proposed Raley's Landing project would be served by the City's municipal water supplies, which originate from surface water from the Sacramento River. Implementing the project would not result in the direct extraction or use of groundwater except during construction dewatering. Although the project is proposed for a partially developed area of West Sacramento, the parcels proposed for development are undeveloped areas of ruderal grassland and scattered trees. Development of the proposed project would substantially increase the coverage of impervious surfaces of various types (e.g., buildings, parking lots, driveways, sidewalks) on these parcels and therefore would interfere with groundwater recharge. Because of the site's proximity to the Sacramento River and the depth and breadth of the groundwater aquifer in the region, it is unlikely that the Raley's Landing project would have a substantial effect on groundwater. However, because the increase in impervious cover could be considered substantial and the distance to local wells is unknown, the project may have a **potentially significant** impact on groundwater recharge. This issue will be analyzed further in the EIR.

c) Implementing the proposed project would not alter the course of any streams or rivers and would not substantially alter the area's drainage patterns, which are already well defined. Although the project is proposed for undeveloped parcels, they are located in an area that has already been substantially developed with urban uses and impervious surfaces. As described above in response VIII(a), site-specific erosion and sedimentation control plans would be developed to demonstrate how the project would reduce the potential for contaminants to enter receiving waters during construction. Project construction and erosion control measures, including coverage and stabilization of disturbed areas and avoidance of grading activities during storm events, would be implemented. BMPs to be followed could include stormwater inlet protection measures, such as the use of straw bales, sandbags, gravel traps, and filters; erosion control measures such as vegetation and physical stabilization; and sediment control measures such as fences, dams, barriers, berms, traps, and basins. Therefore, the project would not result in substantial erosion or siltation on-site or off-site. The project would result in **less-than-significant** impacts on drainages and erosion on- or off-site; however, for purposes of public disclosure, this issue will be analyzed further in the EIR.

d, e) As stated previously, implementing the proposed project would not substantially alter the area's drainage patterns; however, the project is proposed for undeveloped parcels, so implementation of the project would create impervious surface on parcels that currently have no impervious surfaces. The increased area of impervious surfaces would reduce infiltration of rainfall, generating runoff during storm events and possibly contributing to on- or off-site flooding. The amount of stormwater drainage and localized off-site runoff associated with the project is unknown at this time. Because the increase in stormwater flows could require new or expanded stormwater drainage facilities, this impact is considered **potentially significant**. This issue will be analyzed further in the EIR.

f) During operation, the proposed project could potentially violate water quality standards associated with urban runoff pollutants to the storm drain and flood control systems. Urban runoff pollutants, including heavy metals, nutrients, hydrocarbons, and suspended solids, are those resulting from the deposition of compounds on streets, highways, and parking areas that are subsequently washed off during storms. Implementing the proposed project could increase the amount of urban runoff from the project area during construction and operation. Source control measures are operational or structural practices that prevent or reduce pollutants at the source, whereas treatment control measures, which are implemented when source control measures are determined to be inadequate in preventing stormwater pollution, capture and treat stormwater runoff through settling, filtration, or biodegradation. Because this impact is considered **potentially significant**, this issue will be analyzed further in the EIR.

g, h) The project site is not located in a 100-year flood hazard area. The Federal Emergency Management Agency issued a Flood Insurance Rate Map in 1995 that designates the area occupied by the project site as Zone X, a designation used for areas protected by levees from the 100-year flood. Implementing the proposed project would not result in the placement of housing or other structures in a 100-year floodplain. This impact is considered **less than significant**; however, because the proposed project site is located near the Sacramento River, this issue will be analyzed further in the EIR.

i) The Raley's Landing project site is located outside the 100-year floodplain. However, if a levee were to fail in the vicinity of the project site, the site could be subject to severe flooding. Although such a levee failure is unlikely, risks to people and structures from flooding are considered **potentially significant** and will be analyzed further in the EIR.

j) The project site is not located near a surface water body in which a seiche or tsunami could directly or indirectly affect the site. In addition, the project site is located on flat topography, so it does not contain slopes that could pose hazards associated with mudflows. Therefore, **no impact** would occur. These issues will not be addressed further in the EIR.

IX. LAND USE AND PLANNING – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☒	☐
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a) The Raley's Landing project site is located in West Sacramento. Implementing the project would not physically divide this community because it would not involve developing new roadways, freeways, or arterials; would not involve developing any lengthy walls or fences; and would not include industrial or other large complexes, large flood control facilities, or other physical impediments to cross-community access. Therefore, this impact is considered **less than significant**, and this issue will not be analyzed further in the EIR.

b) The project site is located in the Washington Specific Plan Area of West Sacramento. It is not located in an area designated or zoned by the City of West Sacramento or agency with jurisdiction over the plan for conservation, open space, or other uses adopted for the purpose of avoiding or mitigating an environmental effect. It is not subject to an adopted habitat conservation plan or natural community conservation plan (NCCP) although an NCCP being prepared by Yolo County may ultimately have some applicability to activities conducted at the project site. The site does not contain and is not part of a wetland mitigation bank or other biological resource mitigation bank, and it neither contains nor is located adjacent to farmland designated or under contract for preservation.

An initial evaluation of the proposed project has identified some minor inconsistencies with land use plans applicable to the project site. The proposed project involves the adoption of amendments to the Raley's Landing Development Agreement and PD-30 text to address these inconsistencies. The proposed development could generate land use conflicts with existing land uses in the vicinity that the goals, policies, objectives, regulations, and standards of the City's General Plan and Zoning Ordinance and Washington Specific Plan are intended to avoid. This would be considered a **potentially significant** impact, and the project's consistency with and relationship to applicable land use plans and its compatibility with adjacent land uses will be evaluated in the EIR.

c) No habitat conservation plan is applicable to the project area. As stated previously in response IV(f), Yolo County and its member cities are developing an NCCP. Because the NCCP has not yet been adopted, the project would have **no impact** on it. However, because NCCP preparation is under way, this issue will be analyzed further in the EIR.

X. MINERAL RESOURCES -- Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☒	☐

a–b) Most of West Sacramento is classified MRZ-1 by the California Geological Survey, meaning that significant mineral deposits are not known to occur in the area. The portion of the city that borders the Sacramento River is classified MRZ-3, indicating the presence of aggregate resources of undetermined value. Mineral resource extraction within city limits has historically been limited to the drilling and operation of natural gas wells. However, of the 24 natural gas wells existing in the city, all of which are currently inactive, only two were ever productive. Therefore, the proposed project would have a **less-than-significant** impact on mineral resources. This issue will not be analyzed further in the EIR.

XI. NOISE – Would the project result in:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

a) Implementing the proposed Raley's Landing project would result in short-term and long-term increases in ambient noise levels. Depending on the activities being performed, as well as the duration and hours during which activities occur, noise associated with project construction activities could result in a temporary substantial increase in average daily ambient noise levels at on-site and nearby noise-sensitive receptors. Construction operations during daylight hours (between 7:00 a.m. and 10:00 p.m., according to the City of West Sacramento General Plan) often are not considered to result in significant noise impacts. However, if construction operations were to occur during the noise-sensitive evening and nighttime hours (i.e., between 10:00 p.m. and 7 a.m.), project-generated noise at nearby noise-sensitive receptors could be substantial. Therefore, a **potentially significant** impact could occur. This impact will be analyzed further in the EIR.

Operation of on-site stationary and area noise sources, as well as increases in vehicle traffic on area roadways attributable to the proposed project, could result in long-term increases in ambient noise levels and substantially affect nearby noise-sensitive receptors. In addition, development of the project would place residences in the vicinity of existing noise-generating land uses (e.g., SR 295, Raley Field, and the existing rail line that crosses the I Street bridge). For these reasons, a **potentially significant** impact could occur. This impact will be analyzed further in the EIR.

b) Construction of the proposed project could involve the use of construction equipment that could result in potentially significant levels of ground vibration, such as pile drivers. Therefore, the generation of excessive groundborne vibration attributable to the construction of the proposed project would be **potentially significant** and this issue will be analyzed further in the EIR.

c, d) Implementing the proposed project would introduce temporary and permanent noise sources to the project area, including construction machinery, stationary sources, and mobile sources. Noise from these sources could be substantial, which would represent a **potentially significant** impact. The EIR will examine whether the project would cause a substantial temporary or permanent increase in ambient noise levels in the project vicinity above preproject levels by providing an assessment of potential short-term (i.e., construction) and long-term (i.e., operational) noise impacts.

e, f) The project site is not located within an airport land use plan area or within 2 miles of a public or private airport. Therefore, it would have **no impact** and this issue and will not be addressed in the EIR.

XII. POPULATION AND HOUSING – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through the extension of roads or other infrastructure)?	☒	☐	☐	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) The proposed Raley's Landing project would directly induce population growth in the project area because it involves the development of 900 residential units. The project also would induce population growth through the development of approximately 845,000 square feet of office space and approximately 86,000 square feet of commercial/retail space. The area around the project site is already developed with homes and businesses, so it is already fully served by roads and other infrastructure and would not require the extension of infrastructure to unserved areas. Because the project would induce substantial growth in the project area, this impact is considered **potentially significant** and will be analyzed further in the EIR.

b, c) The project is proposed for parcels that are currently vacant. Because implementing the project would not displace existing housing or residents and thus would not necessitate construction of replacement housing elsewhere, it would have **no impact** and this issue and will not be analyzed further in the EIR.

<u>XIII. PUBLIC SERVICES</u> -- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?	☒	☐	☐	☐
b) Police protection?	☒	☐	☐	☐
c) Schools?	☒	☐	☐	☐
d) Parks?	☒	☐	☐	☐
e) Other public facilities?	☐	☐	☐	☒

a) The West Sacramento Fire Department provides fire protection, suppression, and first-response emergency services for the project area, which is already partially developed. Implementing the proposed project would directly result in impacts associated with the provision of, or need for, new fire department facilities or services to maintain acceptable service ratios, response times, or other performance objectives. The addition of approximately 900 residential units would require increasing fire department staffing by up to four firefighters to maintain an acceptable service ratio. The development of high-rise residential and office complexes would require additional specialized equipment. For these reasons, the impact on fire protection would be **potentially significant** and will be analyzed further in the EIR.

b) The West Sacramento Police Department provides police services for the project area, which is already partially developed. Implementing the proposed project would directly result in impacts associated with the provision of, or need for, new police department facilities or services to maintain acceptable service ratios, response times, or other performance objectives. The addition of approximately 900 residential units would require increasing West Sacramento Police Department staffing to maintain an acceptable service ratio. Therefore, the impact on police protection would be **potentially significant** and will be analyzed further in the EIR.

c) The Washington Unified School District serves the students in the project area. Implementing the proposed project would add approximately 900 residential units to the project area, adding students to the local school system. Depending on the existing capacity of the schools that serve the project area, an increase in student population could adversely affect the school system's ability to serve existing and new students. Because the impact on schools could be **potentially significant**, this issue will be analyzed further in the EIR.

d) The City of West Sacramento Parks and Recreation Department provides recreation and leisure opportunities to the city with its park facilities and recreation programming. The increase in population associated with implementing the proposed project is anticipated to increase the use of recreation facilities in the city and thus increase maintenance requirements. It also could contribute to the need for new parks to maintain performance objectives. Because the impact on parks could be **potentially significant**, this issue will be analyzed further in the EIR.

e) The proposed project is not anticipated to affect public facilities beyond those already addressed in this section and elsewhere in this initial study. Therefore, the proposed project would have **no impact** on other public facilities.

XIV RECREATION –

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☒	☐	☐	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☒	☐	☐	☐

a) See response XIII(c), above. Recreational facilities are provided and maintained by the City of West Sacramento Parks and Recreation Department. Recreational facilities in the project area include River Walk Park, a 7.5-acre park located along the Sacramento River and adjacent to the western boundary of the proposed Raley's Landing project site, and Elkhorn Park, a neighborhood park located approximately 1 mile northeast of the site. Implementing the proposed Raley's Landing project would increase the number of residents and employees in the project vicinity, thereby increasing the use and potential physical deterioration of these and other recreational facilities in the area. Therefore, this impact on recreational facilities is considered **potentially significant**. This issue will be analyzed further in the EIR.

b) As stated previously, implementing the proposed project would generate an increase in residents and employees in the project area and a resulting increase in the use of existing nearby parks. Because it is uncertain whether existing parks would need to be expanded or new parks would need to be constructed to accommodate the increase in residents and employees in the project area, this impact is considered **potentially significant**, and this issue will be analyzed further in the EIR.

XV. TRANSPORTATION/TRAFFIC – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase on either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☒	☐	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the applicable congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☒	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
e) Result in inadequate emergency access?	☒	☐	☐	☐
f) Result in inadequate parking capacity?	☒	☐	☐	☐
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☒	☐	☐	☐

a, b) Implementing the proposed Raley's Landing project would increase the number of residential units and the amount of office and commercial/retail space in West Sacramento and would cause a commensurate increase in traffic on local roadways. The increased traffic generated by implementing the project could cause or contribute to reductions in level of service standards on existing streets and intersections. This impact is considered **potentially significant**. Therefore, a detailed traffic study will be completed, and the EIR will evaluate the impacts on traffic volume, level of service, and intersection delay associated with the project.

c) The proposed project site is not located in an airport land use plan area or within 2 miles of a public or private airport. Therefore, the project would not have the potential to affect air traffic patterns or result in substantial safety risks associated with airports. The proposed project also would not include a level or type of development that would result in a substantial increase in air traffic levels. Therefore, this impact is considered **less than significant**, and this issue will not be analyzed further in the EIR.

d) The proposed project would be developed in an existing street system. Portions of two roadways would be abandoned, but no other modifications of the street system would be required. Conflicts could occur between cars and pedestrians or bicyclists because vehicular, pedestrian, and bicycle traffic would all increase in the project vicinity after project implementation. This impact is considered **potentially significant**; therefore, measures to minimize potential conflicts and reduce risks between automobiles, bicyclists, and pedestrians will be addressed in the EIR.

e) The proposed project would be developed in the Washington Specific Plan Area of West Sacramento, which has an existing grid street pattern. The project would be constructed in a manner consistent with all applicable emergency access requirements. As stated previously, the project involves abandoning portions of two roadways, which could have an impact on emergency access to and through the project site. Therefore, this impact would be **potentially significant**. This issue will be analyzed further in the EIR.

f) Under the proposed project, 4,352–4,652 surface and multilevel parking spaces would be added to accommodate the proposed residential, office, and commercial/retail uses. Implementing the proposed project also would involve the development of the Washington Street property, which is used for parking for events at Raley Field. Because the number of parking spaces proposed for the project would not meet the requirements of City parking standards, this impact is considered **potentially significant** and will be analyzed further in the EIR.

g) The proposed project does not include any alternative transportation elements. Because it is uncertain whether the project would conflict with adopted policies, plans, or programs supporting alternative transportation, this impact is considered **potentially significant**, and this issue will be analyzed further in the EIR.

XVI. UTILITIES AND SERVICE SYSTEMS – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste.	☐	☐	☒	☐

a, b, e) Wastewater treatment and disposal for the proposed project would be provided by the City of West Sacramento Wastewater Treatment Plant. Under existing conditions, wastewater generated in the project area is conveyed to the treatment plant by the City's sanitary collection system. Wastewater receives secondary treatment at the plant, and the treated wastewater is then discharged to the Sacramento River under an existing RWQCB discharge permit. The proposed project would be served by this conveyance, treatment, and disposal system.

The wastewater treatment plant has a flow capacity of 7.5 million gallons per day (mgd), which may be expanded to 16 mgd. Peak daily flow is approximately 5.7 mgd. As part of Sacramento County's approved Lower Northwest Interceptor project, a 120-inch-diameter gravity pipeline will be installed that connects West Sacramento to the Sacramento Regional Wastewater Treatment Plant (SRWTP). This will provide an additional 47 mgd of flow capacity for West Sacramento, beginning in approximately 2006. The combined capacity of the City of West Sacramento Wastewater Treatment Plant and the SRWTP is adequate to serve the proposed project. Although this impact is considered **less than significant**, for the purpose of public disclosure, this issue will be analyzed further in the EIR.

The City of West Sacramento receives its water supply from the Sacramento River and eight city wells. The Bryte Bend Water Treatment Plant is the main source of treated water supply for the city. The treatment plant was expanded in 2004, increasing the capacity of the treatment plant from 24 mgd to 39 mgd. The total capacity of the wells is 9 mgd. In addition, the city has three wells for emergency purposes. Average daily water use in the city is approximately 9 mgd, with a peak summer use of 24 mgd. Existing water treatment facilities would be adequate to serve the proposed project. Although this impact is considered **less than significant**, for the purpose of public disclosure, this issue will be analyzed further in the EIR.

c) The project is proposed for undeveloped parcels in a partially developed area of West Sacramento. Implementation of the project would create impervious surface on parcels that currently have no impervious surfaces. The increased area of impervious surfaces would reduce infiltration of rainfall, generating runoff during storm events. The amount of stormwater drainage and localized off-site runoff associated with the project is unknown at this time. Because the increase in stormwater flows could require new or expanded stormwater drainage facilities, the construction of which could cause significant environmental effects, this impact is considered **potentially significant**. This issue will be analyzed further in the EIR.

d) The City of West Sacramento supplies water to the project area. The City receives its water supply from the Sacramento River and eight city wells. The City receives Sacramento River water through an existing water rights permit issued by the SWRCB and by a 40-year contract with the U.S. Bureau of Reclamation signed in July 1980. The City is permitted to withdraw an average of 21.1 mgd from the Sacramento River. The total capacity of the wells is 9 mgd. Average daily water use in the city is approximately 9 mgd, with a peak summer use of 24 mgd. Implementing the proposed project would result in an increased demand for city water; however, the city water supplies are sufficient to serve the project, so no new or expanded entitlements would be needed. This impact is considered **less than significant**; however, for the purposes of public disclosure, this issue will be analyzed further in the EIR.

f, g) Most of the solid waste collected in the City of West Sacramento is disposed of at the Yolo County Central Landfill. The site is operated as a Class III sanitary landfill and incorporates source separation resource recovery facilities. The landfill has approximately 16 million cubic yards of capacity remaining and is expected to remain open until 2021. Development of the proposed project would incrementally increase the amount of solid waste generated in the city; however the landfill has sufficient permitted capacity to accommodate the project's solid waste disposal needs. In addition, the project would comply with Assembly Bill 939 (the California Integrated Waste Management Act of 1989) and California Integrated Waste Management Board programs related to solid waste reduction and recycling. This impact is considered **less than significant**; however, for the purposes of public disclosure, this issue will be analyzed further in the EIR.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probably future projects.)	☒	☐	☐	☐
c) Does the project have environment effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

a) As described in the preceding sections, the proposed Raley's Landing project has the potential to degrade the quality of the environment by creating impacts in the areas of aesthetics, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, public services, recreation, transportation and traffic, and utilities and service systems. Therefore, project implementation would result in **potentially significant** impacts. These impacts will be evaluated in the relevant sections of the EIR.

b) Implementing the proposed project would generate potential impacts related to aesthetics, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, public services, recreation, transportation and traffic, and utilities and service systems. These impacts, when added to impacts associated with other past, present, and reasonably foreseeable future projects (e.g., projects implemented by the City of West Sacramento, projects being considered by state agencies, projects proposed by various other agencies), could result in impacts that are cumulatively considerable. Therefore, the project could cause or contribute to a **potentially significant** cumulative impact. All cumulative impacts will be evaluated in the EIR.

c) As described in the previous sections, the proposed project has the potential to cause air quality, hazards and hazardous materials, hydrology and water quality, noise, traffic, and other impacts that could potentially cause substantial adverse effects on human beings, either directly or indirectly. Therefore, a **potentially significant** impact would occur. This impact will be evaluated in the relevant sections of the EIR.

References

California Department of Conservation, Division of Land Resource Protection. 2002. Farmland Mapping and Monitoring Program, Important Farmland Coverage, Yolo County, California. Available <ftp.consrv.ca.gov/pub/dirp/fmmp>. Accessed March 23, 2005.

White, Sandra. Senior planner. City of West Sacramento Community Development Department, West Sacramento, CA. February 4, 2004—telephone conversation with Bob Solecki of EDAW regarding Yolo County natural community conservation plan.

COMMENTS ON THE NOP

William D. Kopper
Attorney at Law
417 E Street
Davis, CA 95616
(530) 758-0757
Fax (530) 758-2844

MAY 02 2005

Paralegals
Kristin Rauh
Jan Scott

April 28, 2005

Jim Bermudez, Assoc. Planner
Community Development
City of West Sacramento
1110 West Capitol Avenue
West Sacramento, CA 95691

Re: Comments on Notice of Preparation of DEIR for Raley's Landing Project

Dear Mr. Bermudez:

The Raley's Landing Project Draft Environmental Impact Report should include an evaluation as to how the residential buildings in the project may be made more energy efficient. Some of the buildings will be mid-rise towers. The following is a list of conservations ideas that could be included in the DEIR:

1) Use of recycled and recyclable building materials;
2) Use of filtered under-floor displacement air ventilation;
3) Use of double wall technology and use of translucent insulating glass in floor to ceiling windows;
4) Provision of a cogeneration plant on site to provide clean, efficient power sources;
5) Use of a gray water system to capture and reuse all rain and waste water;
6) Use of planted roofs to reduce the heat island effect;
7) Use of a thermal storage system to store cold water for daytime cooling to reduce the building's peak demand loads on the City's electrical grid;
8) Use of daylight dimming and LED lights to reduce electric usage in the building.

Sincerely,

WILLIAM D. KOPPER

WDK:js

California Regional Water Quality Control Board

Central Valley Region

Robert Schneider, Chair

Alan C. Lloyd, Ph.D.
Agency Secretary

Sacramento Main Office
11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Phone (916) 464-3291 • FAX (916) 464-4645
http://www.waterboards.ca.gov/centralvalley

Arnold Schwarzenegger
Governor

12 May 2005

MAY 18 2005

City of West Sacramento
Community Development Department
1110 West Capitol Avenue
West Sacramento, CA 95691

PROPOSED PROJECT REVIEW, CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA), NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE RALEY'S LANDING PROJECT, WEST SACRAMENTO, YOLO COUNTY

As a Responsible Agency, as defined by CEQA, we have reviewed the Notice of Preparation of a Draft Environmental Impact Report for the Raley's Landing project. Based on our review, we have the following comments regarding the proposed project.

Storm Water

A NPDES General Permit for Storm Water Discharges Associated with Construction Activities, NPDES No. CAS000002, Order No. 99-28-DWQ is required when a site involves clearing, grading, disturbances to the ground, such as stockpiling, or excavation that results in soil disturbances of one acre or more of total land area. Construction activity that involves soil disturbances on construction sites of less than one acres and is part of a larger common plan of development or sale, also requires permit coverage. Coverage under the General Permit must be obtained prior to construction. More information may be found at http://www.swrcb.ca.gov/stormwtr/construction.html

Post Construction Storm Water Management

Manage storm water to retain the natural flow regime and water quality, including not altering baseline flows in receiving waters, not allowing untreated discharges to occur into existing aquatic resources, not using aquatic resources for detention or transport of flows above current hydrology, duration, and frequency. All storm water flows generated on-site during and after construction and entering surface waters should be pre-treated to reduce oil, sediment, and other contaminants. The local municipality where the proposed project is located may now require post construction storm water Best Management Practices (BMPs) pursuant to the Phase II, SWRCB, Water Quality Order No. 2003 – 0005 – DWQ, NPDES General Permit No. CAS000004, WDRS for Storm Water Discharges from Small Municipal Separate Storm Sewers Systems (MS4). The local municipality may require long-term post-construction BMPs to be incorporated into development and significant redevelopment projects to protect water quality and control runoff flow.

Dewatering Permit

The proponent may be required to file a Dewatering Permit covered under Waste Discharge Requirements General Order for Dewatering and Other Low Threat Discharges to Surface Waters Permit, Order No. 5-00-175 (NPDES CAG995001) provided they do not contain significant quantities of pollutants and are either (1) four months or less in duration, or (2) the average dry weather discharge does not exceed 0.25 mgd:

a. Well development water
b. Construction dewatering
c. Pump/well testing
d. Pipeline/tank pressure testing
e. Pipeline/tank flushing or dewatering
f. Condensate discharges
g. Water Supply system discharges
h. Miscellaneous dewatering/low threat discharges

Industrial

A NPDES General Permit for Storm Water Discharges Associated with Industrial Activities, NPDES No. CAS000001, Order No. 97-03-DWQ regulates 10 broad categories of industrial activities. The General Industrial Permit requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT). The General Industrial Permit also requires the development of a Storm Water Pollution Prevention Plan (SWPPP) and a monitoring plan. The General Industrial Permit requires that an annual report be submitted each July 1. More information may be found at http://www.swrcb.ca.gov/stormwtr/industrial.html

For more information, please visit the Regional Boards website at http://www.waterboards.ca.gov/centralvalley/ or contact me at 916.464.4683.

DANNAS J. BERCHTOLD
Storm Water Unit
916.464.4683

cc: State Clearinghouse, Sacramento

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www.yolobus.com

May 11, 2005

City of West Sacramento
Community Development Department
1110 West Capitol Avenue
West Sacramento, CA 95691
Attention: Jim Bermudez

MAY 16 2005

RE: Raley's Landing Project Draft EIR scope

Dear Sir,

Thank you for the opportunity to review the site plan for the proposed development in northeast West Sacramento. As you may know, we currently run a good amount of both local and intercity service in the area. Route 42A and 42B provide intercity service from West Capitol @ 5th St and West Capitol @ 3rd St. to Davis and Downtown Sacramento. Route 42A and 42B run once an hour. Routes 40 and 41 provide local service from 3rd St. @ G St. to both West Sacramento and Downtown Sacramento. Routes 40 and 41 run once an hour.

With this in mind, YCTD would like to ask that the scope of the EIR look into how increased bus service to the area might relieve or mitigate some of the air quality and or traffic impacts of the development.

Sincerely,

Terry Bassett
Executive Director

CITY OF SACRAMENTO
CALIFORNIA

DEVELOPMENT SERVICES DEPARTMENT

Environmental Clearinghouse Committee

1231 I STREET
SUITE 300
SACRAMENTO, CA
95814-2998

Environmental Planning Services
916-808-1909
FAX 916-264-7185

May 16, 2005

Mr. Jim Bermudez, Project Manager
City of West Sacramento
Community Development Department
1110 West Capitol Avenue
West Sacramento, CA 95691

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report for the Raley's Landing Project.

Dear Mr. Bermudez,

The City of Sacramento, Environmental Planning Services, has received comments on this project. We are attaching and including these comments (Azadeh Doherty, Staff Aide– Department of Transportation and Fedolia Harris Senior Transportation Planner – Long Range Planning Division). We appreciate the opportunity to provide comments and questions on the DEIR. We are forwarding the comments received to date. If you have any questions regarding our current comments, please do not hesitate to contact us.

Sincerely,

Ron Bess
Planning Technician

Enclosures

cc: ECC 05-008

The Department of Transportation (DOT) for the City of Sacramento offers the following comments regarding the Notice of Preparation of a Draft Environmental Impact Report for the Raley's Landing Project.

The City of Sacramento DOT is concerned that this project will have a potential negative impact on traffic and as a result recommends that traffic analysis work be performed on the following intersections: I & 3rd; I & 5th; L & 5th; Capitol Mall & 5th; Q & 5th; P & 5th; Richards Blvd. & Jibboom St.; P Street Freeway Ramps; Q Street Freeway Ramps; I Street Freeway Ramps; J Street Freeway Ramps; and Richards Blvd Freeway Ramps.

The City of Sacramento is currently working on the Railyards Development project, the North CBD Access Study and the Central City Two-Way Conversion project. A cumulative traffic analysis needs to consider these projects.

Furthermore, the following parking ratios are being proposed for River 1, 2, and 3 and the Washington Street property:

Commercial/retail - 1 space per 300 S.F.
Residential - 1 space per 500 S.F.
Office - 1 space per 300 S.F.

These ratios result in 1000-1200 spaces for River 1, 290 spaces for River 2, 2000-2200 spaces for River 3 and 900-1000 spaces for Washington Street. The total number of proposed parking spaces will range from 4190 to 4690.

Within River 2 is the existing Ziggurat building with an existing 1600 space parking structure. There are about 800 vacant parking spaces in the Ziggurat garage.

The Raley's Landing project includes more parking than is required for the project. The parking ratios proposed are much more generous than those used by the City of Sacramento. Since the 800 available spaces in the Ziggurat garage are not being used the Raley's Landing project should utilize these parking spaces before a new parking garage is built.

Approval of the project as proposed would result in an "overparked" situation. The surplus spaces could potentially be sold at a very low rate in order to attract people who park in City of Sacramento lots located in Old Sacramento or Downtown to park instead in West Sacramento. This will have a negative financial impact on the revenues generated by City of Sacramento parking lots. In addition, excessive parking availability does not promote the use of alternative travel modes such as transit, biking and walking. Light rail transit is expected to extend to the Raley's Landing area at some point in the future, however, the proposed parking ratios do not support transit use.

The City of West Sacramento should consider a decrease in the proposed parking ratios and require the developer to utilize the 800 Ziggurat spaces as part of the project.

Finally, the City of Sacramento DOT requests to review the traffic report and provide comments prior to its finalization. In addition, the DOT wishes to receive a copy of the final traffic report.

We appreciate the opportunity to review and comment on this proposal. If you have any questions regarding these comments please contact me at 808-3137.

Azadeh Doherty
Staff Aide

From: Fedolla Harris
To: Ron Bess
Date: 5/3/05 4:54PM
Subject: ECC-05-008 Comments from DSD-Long Range Planning-Transportation

The Development Services Department for the City of Sacramento offers the following comments regarding the Notice of Preparation of a Draft Environmental Impact Report for the Raley's Landing Project (ECC-05-008)

The City's Department of Transportation recently began a Central City Parking Master Plan that will evaluate the current supply and future need for additional parking in the Central City. By City standards, the proposed project would be overparked by 23% at minimum. This does not take into account the surplus 600-700 parking spaces available at the Ziggurat Building adjacent to River 1 and River 2. Such a surplus has the potential to impact the parking demand on the Sacramento side of the river and those impacts should be evaluated for their cumulative effect on the riverfront. Howard Chan is the manager of the Off-Street Parking Division and should be consulted while evaluating the Transportation/Traffic impacts that you have identified as potentially significant.

The NOP identifies the potential for long-term increases in regional emissions associated primarily with mobile sources. The analysis of this impact should look at the potential for reducing mobile source emissions by removing the disincentive to use alternative modes created by the abundance of parking provided. Sacramento Regional Transit currently serves the project site and additional service could be negotiated for in order to boost ridership.

Thank you for the opportunity to comment on this important project. Staff looks forward to reviewing the environmental analysis in the near future. Do not hesitate to call if you have any questions or concerns regarding these comments.

Fedolia "Sparky" Harris
Senior Transportation Planner
City of Sacramento, Planning Division
(916) 808-2996

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MAY 17 2005

May 16, 2005

Jim Bermudez, Associate Planner
City of West Sacramento
1110 West Capitol Avenue
West Sacramento, CA 95691

Subject: Notice of Preparation for Raley's Landing Planned Development

Dear Mr. Bermudez:

Thank you for the opportunity to comment on the proposed project. The project has the potential to adversely impact the Washington Unified School District. The EIR should fully address the potential impacts associated with changes in land use and generation of additional students in grades K-12 to ensure that students will be adequately housed. Cumulative impacts associated with the proposed project, projects approved but not yet constructed, and other proposed projects should be addressed.

Using current student generation rates, the project has the potential to generate the following number of students:

Grade	Students	School of Attendance
K-6	266	Westmore Oaks Elementary
7-8	57	Golden State Middle
9-12	90	River City High

The project description in the Notice of Preparation is not clear on the type of residential housing that is proposed. Student generation is based on an assumption that the proposed 900 residential units are multi-family.

Schools of attendance are currently impacted and cannot accommodate growth anticipated from this development. Alternatives to mitigate impacts should be discussed with the District and included in the EIR.

The District has initiated a new Facilities Master Plan, which is anticipated to be complete in September. Information on this proposed development will be provided to the District's consultant for inclusion.

I look forward to working with you and your environmental consultant in identifying specific needs of the District during the preparation of the EIR.

If you have any questions, please contact me at 375-7604, Extension 2335.

Sincerely,

Denny Jones, Director
Facilities Planning & Construction

Attachment: Project Site Location Map

cc: Patrick Campbell
Vicky Dali
Nina Santo, California Financial Services

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 – Sacramento Area Office
VENTURE OAKS, MS 15
P. O. BOX 942874
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May 16, 2005

05YOL0017
05-YOL-50 PM 1.202
Raley's Landing Project
Notice of Preparation

Mr. Jim Bermudez
City of West Sacramento
1110 West Capitol Avenue
West Sacramento, CA 95691

Dear Mr. Bermudez:

Thank you for the opportunity to review and comment on the Notice of Preparation (NOP) for the Raley's Landing Project. Our comments are as follows:

- We believe the incremental traffic effects of this project to be considerable when viewed cumulatively with the existing development and other projects being proposed. On April 19, 2005 Caltrans met with the City to discuss the cumulative traffic impacts to the State Highway System due to the Raley's Landing Project. Caltrans appreciates the opportunity to comment on the traffic scope; however, we are concerned that we were not able to view the entire scope of work. This project has the potential to generate approximately 1878 a.m. and 1998 p.m. peak hour trips. In addition, the NOP indicates 5000+ parking spaces will be constructed as part of this project. We would like to work with the City to mitigate potential impacts to the State Highway System; in particular, the potential impacts to the Jefferson Boulevard/US 50 interchange, US 50/Business 80 interchange, the US 50 mainline, and the Tower Bridge.

- Mitigation measures should be identified based on the projected traffic and the impacts to the State Highway System.

"Caltrans improves mobility across California"

- The NOP should explore mass transit options to help alleviate traffic impacts.

- We encourage participation and partnerships with the Transportation Management Association to explore alternative modes of transportation

- We recommend this project's design encourage basic livability concepts that promote and facilitate the use of alternative transportation modes, including bicycles, transit, and pedestrian travel.

Please provide our office with copies of any further action regarding this project. If you have any questions regarding these comments, contact Crystal De Castro at (916) 274-0636.

Sincerely,

Katherine Eastham

KATHERINE EASTHAM, Chief
Office of Transportation Planning – Southwest

SRCSD

Wastewater Treatment

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Vebsite: www.srcsd.com

May 18, 2005
E225.000

Jim Bermudez
City Of West Sacramento
Community Development Department
1110 West Capitol Avenue
West Sacramento, CA 95691

Subject: **Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for The Raleys' Landing Project**

Dear Mr. Bermudez:

County Sanitation District 1 (CSD-1) and Sacramento Regional County Sanitation District (SRCSD) have reviewed the Notice of Preparation (NOP) for the Draft Environmental Impact Report (EIR) for the subject project.

The subject property is outside the boundaries of CSD-1 and the Urban Service Boundary shown on the Sacramento County General Plan. However, the City has recently been annexed to SRCSD.

The current plans of SCRSD and the City call for beginning treatment of the West Sacramento wastewater in the near future. This will be undertaken as a result of an agreement between the City and the District, and will begin with the completion of the Districts' Northwest Interceptor Project upon completion of installation estimated to be in 2006.

Thereafter, the City will collect local sewage and the District will convey the waste to its' Sacramento County Wastewater Treatment Plant (SWTP). The District and the City have determined that adequate capacity exists at the subject plant to properly treat the waste.

We expect that if the project is subject to currently established policies, ordinances, fees, and to conditions of approval, then mitigation measures within the EIR will adequately address the sewage treatment aspects of the project. We anticipate a less than significant impact to the Districts' sewage facilities due to mitigation.

If you have any questions regarding these comments, please call Stephen Moore at (916) 876-6296 or myself at (916) 876-6094.

Sincerely,

Wendy Haggard

Wendy Haggard, P.E.
Department of Water Quality
Development Services

WH/JRO: cc

cc: David Ocenosak
Maria Cablao
Amber Schalansky

bermudez051805.ltr.doc

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 – Sacramento Area Office
VENTURE OAKS, MS 15
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May 18, 2005

Raley's Landing Project
Transportation Analysis

Mr. Jim Bermudez
City of West Sacramento
1110 West Capitol Avenue
West Sacramento, CA 95691

Dear Mr. Bermudez:

Thank you for meeting with our staff on April 19, 2005 to discuss the Raley's Landing Project. Our comments at this juncture to assist you with the preparation of the traffic impact study (TIS) for this project are as follows:

- This project will generate significant traffic impacts, especially with regard to cumulative area impacts including existing and proposed development . We used the project data you provided and trip generation rates from the Institute of Transportation Engineers' *Trip Generation* manual to determine that the project could potentially generate 32,823 average daily trips including 4,536 a.m. peak hour trips, and 4,494 p.m. peak hour trips. Please see the enclosed spreadsheet for additional information.

- Significant impacts to State Highway System must be mitigated; including, in particular, probable significant impacts to the Jefferson Boulevard/US 50 interchange, US 50/Business 80 interchange, the US 50 mainline, and the Tower Bridge. The TIS must be developed so that the precise impacts can be determined.

- The TIS should address the following scenarios:

    - Existing conditions without the project
    - Existing conditions with the project
    - Cumulative conditions (without the project)
    - Cumulative conditions (with the project)

- The analysis should include the (individual, not averaged) Level of Service (LOS) and traffic volumes applicable to all intersection road approaches and turn movements. The procedures contained in the 2000 update to the Highway Capacity Manual (HCM) along with the Guide for the Preparation of Traffic Impact Studies should be used as a guide for the TIS. We request that you reference the "Guide for the Preparation of Traffic Impact Studies" which can be found at: http:www.dot.ca.gov/hq/traffops/developserv/operational systems/reports/tisguide.pdf

- The City of West Sacramento's General Plan should be consistent with the SACMET model in its analysis of roadway improvement and land use.

- Enclosed is a copy of the weave analysis data we provided to your traffic consultant, DKS, for this project.

Please provide our office with copies of the draft TIS for our review. For further discussion regarding this project, please contact Crystal De Castro at (916) 274-0636.

Sincerely,

for

KATHERINE EASTHAM, Chief
Office of Transportation Planning – Southwest

Enclosures

Raley's Landing Proposed Development Trip Generation

Raley's Landing Proposed Project:
- 900 Residential Units
- 845,000 sq/ft of office space
- 86,000 sq/ft of commercial/retail uses
- 100-300 hotel rooms with a 7,000-15,000 sq/ft conference center.

Development					Trip Generation					
Site	Land use	ITE Code #	Size/Unit	Trip Rate Per (Unit-Sq/ft)	Avg Daily Trips*	Saturday Trip*	Sunday Trip*	7-9 AM Peak Hour*	4-6 PM Peak Hour*	Saturday Peak Hour*
A	Apartment	220	900 Units	6.72	5,559	6,809	5,677	459	558	468
B	Office Build	710	845,000 sq/ft	11.01	9,303	2,003	828	1,310	1,259	346
C					***13,395***	***19,495***	***14,653***	***1,434***	***935***	***1598***
	Restaurant**	934	27,000 sq/ft	496						
	Gas Station**	945	15,000 sq/ft	77.68	***1,165***	***NA***	***NA***	***1,165***	***1,446***	***NA***
	Retail Center***	814	44,000 sq/ft	44.32	1,950	1,850	494	NA	119	NA
D	Hotel**	310	300 rooms	8.17	2,451	2,457	1,785	168	177	216
			Total Trips		33,823	32,614	23,437	4,536	4,494	2,628

Source:
* Trip Generation, 7th Edition. Institute of Transportation Engineers (ITE)
** Estimates from project proposed 42,000 sq/ft of retail/restaurant uses and 300-room hotel scenarios as noted in the River 1 area.
*** Estimates from project proposed 20,000 sq/ft of commercial uses as noted in the River 3 and Washington Street development area.

05-18-2005

STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER, Governor

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

RECEIVED
MAY 31 2005
DEPARTMENT OF
COMMUNITY DEVELOPMENT

May 27, 2005

File No.:183-57
SCH#2005042083

Jim Bermudez
City of West Sacramento Community Development Department
1110 W. Capitol Avenue, 2nd Floor
West Sacramento, CA 95691

Dear Mr. Bermudez:

Re: Raley's Landing Development Agreement & Planned Development

As the state agency responsible for rail safety within California, we recommend that any development projects planned adjacent to or near the rail corridor in the County be planned with the safety of the rail corridor in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to Union Pacific Railroad right-of-way.

Safety factors to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes and appropriate fencing to limit the access of trespassers onto the railroad right-of-way.

The above-mentioned safety improvements should be considered when approval is sought for the new development. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists and pedestrians in the County.

If you have any questions in this matter, please call me at (415) 703-2795.

Very truly yours,

Kevin Boles
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection and Safety Division

cc: Jim Smith, UPRR

COMMENTS RECEIVED DURING THE APRIL 27, 2005 PUBLIC SCOPING MEETING

Environmental Impact Report on the Raley's Landing Project
Comments Received during the April 27, 2005 Public Scoping Meeting

The following text describes verbal comments received during a public scoping meeting conducted in support of the Environmental Impact Report (EIR) for the Raley's Landing project. The scoping process for the Raley's Landing EIR, including the public scoping meeting, was conducted in accordance with Section 15082 of the State CEQA Guidelines.

The public scoping meeting began at 6:00 pm on April 27, 2005, and was closed at approximately 7:00 pm. An informal question-and-answer period was conducted after the scoping meeting was closed; however, the scoping comments provided below include only those comments received during the formal scoping meeting.

The comments provided below are grouped alphabetically by the speaker's last name and are not necessarily in the same order they were received during the scoping meeting.

Jerry Fat, Sacramento
Mr. Fat noted that the EIR should include an assessment of the project's consistency with the Sacramento Riverfront Master Plan prepared jointly by the cities of West Sacramento and Sacramento.

David Ferko, West Sacramento
Mr. Ferko expressed concerns over public noticing related to the project and wanted to ensure that the community was adequately notified when the Draft EIR was available. Mr. Ferko would like the EIR to address/evaluate several areas of concern regarding traffic:

- the cumulative effects of traffic generated by the Raley's Landing project and other projects in the area
- traffic impacts from construction activities
- the effects of events at Raley Field on traffic and access, particularly the closing of the Third Street "tunnel" under State Route 275 to vehicle traffic during events

Mr. Ferko also suggested that the EIR evaluate the ability of utility systems at the project site (e.g., sewer, stormwater, domestic water) to support the proposed project and identify in the EIR where new utility infrastructure might be needed (if needed). He also noted that in his experience, during heavy storms, the groundwater level in portions of the project area can come close to the surface and adversely affect drainage. This issue should be considered in the EIR in the analysis of sewer and stormwater infrastructure.

Bill Kopper, Davis
Mr. Kopper requested that the Draft EIR include as an attachment/appendix the existing development agreement applicable to the project site.

Jeff Lyon, West Sacramento
Mr. Lyon would like the EIR to have language that allows for, or supports the concept of retaining, and making available for public benefit (e.g., display, interpretive uses) any historical items that may be found during excavations at the project site.

Cindy Nelson, West Sacramento
Ms. Nelson commented that the EIR should address the project's potential effects on the integrity of the Sacramento River levee and adequacy of flood protection provided by the levee for new development on the project site.

Chandra Sharma, West Sacramento
Ms. Sharma noted that the EIR should address whether existing homes will be affected by the project. She also noted that it appeared much of the project-generated traffic would utilize Fifth Street and that older residents in the vicinity could be adversely affected by both increased traffic and disruption during project construction. These impact mechanisms should be evaluated in the EIR, and methods to channel traffic down Third Street rather than Fifth Street should be considered as mitigation measures. Ms. Sharma also pointed out that the EIR needed to address the cumulative traffic impact of the Raley's Landing project and other new development in the area.

J.P. Singh, West Sacramento
Mr. Singh expressed a concern over whether there will be sufficient parking for Raley Field events if the Washington Street property is no longer available for surface parking. The EIR should address this parking supply issue.

Sal Singh, West Sacramento
Mr. Singh would like the EIR to clearly identify any changes or improvements to Third Street that may result from the project.

Inez Tomasello, West Sacramento
Ms. Tomasello expressed concerns over tree removal associated with the project and would like this issue addressed in the EIR.

APPENDIX B

RALEY'S LANDING COMPARISON OF PROPOSED MODIFICATIONS

Appendix B. Raley's Landing
Comparison of Proposed Modifications

Text Change Request	Existing	Proposed
Document: Raley's Landing Development Agreement		
Amend the Development Agreement to expand the DA Property.	An area generally bordered by the Sacramento River, West Capitol Avenue, Third Street, and E Street ("DA Property").	Expand to include the area generally bordered by West Capitol Avenue, Third Street, G Street, and Fifth Street.
Amend the Development Agreement uses.	(i) a hotel of approximately 428 rooms with convention facilities, food and beverage service facilities, and hotel recreational amenities, plus parking, (ii) approximately 945,000 square feet of office space, plus parking, (iii) approximately 46,000 square feet of retail shops, plus parking, (iv) 3,357 off-street parking spaces, and (v) an apartment project of approximately 218 units and 218 parking spaces, as described in Exhibit C to the Agreement ("Raley's Landing Project"). (Agreement, p. 1, Recital C.)	(i) approximately 1,245,000 square feet of office space, **including the existing 400,000 square feet in the Ziggurat building** (ii) approximately 102,000 square feet of commercial/retail, (iii) 5,952 to 6,252 on-site parking spaces, including surface and multi-level stalls, **(including the existing 1,600 stalls in the existing garage)** and (iv) 1,150 residential units, including the potential for a hotel of up to approximately 300 rooms.
RMU Density Standards	Overall Raley's Landing D.A. allowable number of housing units: 646 units (428 hotel rooms + 218 apartments)	Maximum requested Residential Units: ► River 1: 450 (possibly including a hotel of up to 300 rooms) ► River 2: 150 ► River 3: 0.0 ► Washington Street: 550
Allowable Commercial Area	Overall Raley's Landing D.A. allowable commercial area (excluding parking): 991,000 square feet (945,000 SF of office + 46,000 SF of retail shops)	Maximum proposed Commercial Area: ► River 1: 287,000 SF ► River 2: 0 ► River 3: 620,000 SF ► Washington Street: 40,000 SF
Masterplan	Exhibit C	Replace with new masterplan exhibit
Document: PD 30		
Section 1: Zoning District Boundary	Applied to those lands in the Broderick area of Yolo County so designated as subarea A on Exhibit A attached to PD 30.	Amend to include a portion of land from subarea B as defined as Washington Street property in Project Application.
Section 2: Uses		**The proposed project is consistent with the requirements of PD 30.**
Number of housing units	River 1: 206 State: 344 River 2: 54 River 3: 252 Washington Street: 309	River 1: 450 State: 0 River 2: 150 River 3: 0 Washington Street: 550

Appendix B. Raley's Landing
Comparison of Proposed Modifications

Text Change Request	Existing	Proposed
	TOTAL: 1,165 Units	**TOTAL: 1,150 Units**
Commercial area	River 1: 299,257 State: 499,198 River 2: 77,755 River 3: 366,557 Washington Street: 448,232 **TOTAL: 1,690,999 SF**	River 1: 287,000 State: 400,000 River 2: 0 River 3: 620,000 Washington Street: 40,000 **TOTAL: 1,347,000 SF**
Section 4: Detailed Development Standards	See specific sections below.	
Minimum Setbacks	Minimum setbacks shall be those of the underlying WF Zone. These setbacks may be reduced to zero depending on appropriate design treatment of buildings fronting on the public street.	**The proposed project is consistent with PD 30.**
Ground Coverage	No building site shall be covered with a building or buildings to an extent greater than 65% of that area of said site.	**The proposed project is consistent with PD 30.**
Height Limitations	No building or structure shall exceed 18 stories or 270 feet.	The proposed project is consistent with PD 30, with the exception of the Phase I building for River 3 which may be up to 20 stories and 300 feet in height.
Landscaping	Every site on which a building is placed shall be landscaped to cover a minimum of 10% of the site with 25% of the 10% being in the parking area.	**The proposed project is consistent with PD 30.**
Storage and Refuse Collection Area	Refuse areas to be screened	**The proposed project is consistent with PD 30.**
Safety	Site plans to be reviewed by West Sacramento Police Department.	**The proposed project is consistent with PD 30.**
Parking and Loading Area Requirements	Off-street parking must conform with the City Zoning Ordinance, except that parking sizes within parking structures may be reduced to compact size stalls, provided no more than 50% of all parking stalls within a structure are compact. Based upon these specifications, the required parking area is as follows: ► River 1: 1/300 SF of commercial space (957 stalls) and 1/500 SF of RU (990 stalls) for a total of 1,947 stalls. ► State: 1/300 SF or 1,664 stalls	The proposed parking area for the Raley's Landing project is as follows: ► River 1: 1,000 to 1,200 stalls ► State: 1,600 stalls **(existing)** ► River 2: 300 stalls ► River 3: 2,152 stalls ► Washington Street: 900 to 1,000 stalls **TOTAL: 5,952 to 6,252 stalls**

Text Change Request	Existing	Proposed
	► River 2: 1/500 SF of 330 stalls ► River 3: 1/300 SF of commercial space or 2,067 stalls ► Washington Street: 1/500 SF of RU (1,343 stalls) and 1/300 SF of commercial space (133 stalls) for a total of 1,343 stalls. **TOTAL: 7,351 stalls**	
Parking Stall Sizes	Per minor modification of PD 30 zone text.	Amend to state acceptable minimum parking stall sizes, as follows: ► Standard parking stall dimension: minimum of 8'–6" x 18'–0" ► Compact parking stall dimension: minimum of 7'–0" x 16'–0" ► Drive aisle width in 90 degree parking configuration: minimum of 22'–0" ► Handicap parking: meet ADA guidelines.
Sign Restrictions	4.50.20 Appurtenant Signs. Signs appurtenant to a permitted use on the premises shall be allowed as long as they do not project above the highest point of the building, are integral with or are attached flat against the building, or are suspended entirely beneath the canopy portion of the building. Animated or moving signs and flashing or oscillating lights shall be prohibited. The aggregate area of such signs shall not exceed one (1) square foot for each one (1) linear foot of building frontage.	4.50.20 Appurtenant Signs. Signs appurtenant to a permitted use on the premises shall be allowed as long as they do not project above the highest point of the building, are integral with or are attached flat against the building, or are suspended entirely beneath the canopy portion of the building. Animated or moving signs and flashing or oscillating lights shall be prohibited. The aggregate area of such signs shall not exceed four (4) square feet for each one (1) linear foot of building frontage. Each building may have up to two building top signs per side of building, but in no event will have more than five signs per building.
Section 5: Detailed Plans		
Usable Open Space: Residential	120 SF of open space per unit within each PD subarea	**The proposed project is consistent with PD 30.**
Usable Open Space: Office/Commercial Areas	100 SF of open space per 1,000 SF of gross office or commercial flow space within PD subarea.	**The proposed project is consistent with PD 30.**
Density Standards	(a) The average FAR for all structures in the PD, not including parking structures, shall not exceed 1.5:1. Density of residential development in each PD subarea shall not exceed an average of 45 dwelling units per acre. (b) A master plan prepared and adopted	The proposed average FAR for all structures in the Raley's Landing project, including parking structures, is as follows: ► River 1: 3.92 ► State: 1.20

Text Change Request	Existing	Proposed
	pursuant to Board of Supervisors Resolution No. 86–82 may result in higher density standards for a specific building site or parcel or property, provided that the density standards set forth in (a) above are not exceeds for the subarea as a whole.	► River 2: 3.18 ► River 3: 2.54 ► Washington Street: 2.16 **TOTAL AVERAGE: 2.32.** The proposed residential FAR for the Raley's Landing project is as follows: ► River 1: 2.48 ► State: 0.00 ► River 2: 3.18 ► River 3: 0.00 ► Washington Street: 2.02 **TOTAL AVERAGE: 1.12.** The total overall residential FAR of the project is consistent with the requirements of PD 30.
Document: Washington Specific Plan (PD-43)		
Section IV: RMU Density Standards	Residential FAR shall not exceed 1:1.	Residential FAR: ► River 1: 2.5:1 ► River 2: 3.2:1 Average residential densities shall be in the range of 25 to 150 units per gross acre. Washington Street: 2.0:1 Average residential densities shall be in the range of 25.1 to 80.2 units per gross acre.
Section V: Circulation		Abandonment of Second Street between E and F Streets.
Section VII: Parking/Parking Structures	Parking structures shall be set back from the curb a minimum of thirty (30) feet.	Parking structures facing 3rd Street shall be set back from the curb a minimum of thirty (30) feet. Parking structures facing any other street shall be subject to the WF zoning regulations.
	When a parking structure directly faces the street and is longer than 200 feet….etc.	When a parking structure directly faces 3rd Street and is longer than 200 feet…etc.
	Off street parking lots should not be located directly adjacent to the street but should be internal to the project. If parking lots must be adjacent to the street they shall not constitute more than 20% of the frontage of the subject block.	As much as possible, off street parking lots should not be located directly adjacent to the street but should be internal to the project.

Appendix B. Raley's Landing
Comparison of Proposed Modifications

Text Change Request	Existing	Proposed
Section VII: Building Frontages	Building massing directly adjacent to the street shall be <u>36</u> feet in height. Portions of buildings higher than <u>36</u> feet shall be further recessed from the ground floor building face at least twenty (20) feet. Building higher than <u>36</u> feet shall meet the maximum ground floor setback criteria.	For Washington Street property only: building massing directly adjacent to the street shall be <u>sixty (60)</u> feet in height. Portions of buildings higher than <u>60</u> feet shall be further recessed from the ground floor building face at least twenty (20) feet. Building higher than <u>60</u> feet shall meet the maximum ground floor setback criteria.
Section VII: Signage Guidelines	Building signage not addressed.	ADD: Building Signage. Building signs shall be allowed as long as they do not project above the highest point of the building, are integral with or are attached flat against the building, or are suspended entirely beneath the canopy portion of the building. Animated or moving signs and flashing or oscillating lights shall be prohibited. The aggregate area of such signs shall not exceed four (4) square feet for each one (1) linear foot of building frontage. Each building may have up to two building top signs per side of building, but in no event will have more than five signs per building.
Add to Section VII - Parking Design Criteria	Per City Zoning Codes and minor modification of PD 30 text.	Amend to state acceptable minimum parking criteria as follows: ► Parking: 1.50–1.75 parking spaces (including guest spaces) shall be provided for every two-bedroom, or larger, dwelling unit. 1.00 parking space (including guest spaces) shall be provided for every studio and one-bedroom dwelling unit. ► Standard parking stall dimension: minimum of 8' –6" X 18'–0" ► Compact parking stall dimension: minimum of 7'–0" X 16'–0" ► Drive aisle width in 90 degree parking configuration: minimum of 22'–0" ► Handicap parking: meet ADA guidelines

APPENDIX C

TRAFFIC DATA

Intersection Capacity Analysis

Existing Condition

AM Peak Hour Scenario

Raley's Landing Project
Existing Condition AM Peak Hour

Scenario Report

Scenario:	Existing Am
Command:	Existing AM
Volume:	Existing Am
Geometry:	Existing AM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Existing Condition AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 1 3rd St/ C St	A	xxxxx	0.354	A	xxxxx	0.354	+ 0.000 V/C
# 2 3rd St/ F St	A	xxxxx	0.099	A	xxxxx	0.099	+ 0.000 V/C
# 3 3rd St/ G St	B	10.3	0.000	B	10.3	0.000	+ 0.000 D/V
# 4 3rd St/ W capitol	A	xxxxx	0.323	A	xxxxx	0.323	+ 0.000 V/C
# 6 5th St/ C St	A	xxxxx	0.277	A	xxxxx	0.277	+ 0.000 V/C
# 7 5th St/ F St	B	10.5	0.000	B	10.5	0.000	+ 0.000 D/V
# 8 5th St/ G St	A	9.7	0.000	A	9.7	0.000	+ 0.000 D/V
# 9 5th St/ West Capitol Ave	A	8.8	0.186	A	8.8	0.186	+ 0.000 V/C
# 11 Jefferson/ West capitol Ave	A	xxxxx	0.532	A	xxxxx	0.532	+ 0.000 V/C
# 12 Jefferson/ Sacramento Ave	B	xxxxx	0.615	B	xxxxx	0.615	+ 0.000 V/C
# 13 SR 275 Ramp West Capitol/ Risk	B	10.5	0.000	B	10.5	0.000	+ 0.000 D/V
# 14 South River Rd/ US 50 WB Rmp	A	xxxxx	0.409	A	xxxxx	0.409	+ 0.000 V/C
# 15 South River Rd/ US 50 On Ramp	C	16.4	0.000	C	16.4	0.000	+ 0.000 D/V
# 17 Front St/ Capital Mall	A	2.6	0.434	A	2.6	0.434	+ 0.000 D/V
# 18 3rd St/ Capital Mall	B	18.8	0.390	B	18.8	0.390	+ 0.000 D/V
# 19 3rd St/ J St	D	38.0	0.909	D	38.0	0.909	+ 0.000 D/V
# 20 3rd St/ P St	A	9.8	0.280	A	9.8	0.280	+ 0.000 D/V
# 21 3rd St/ Q St	B	11.6	0.561	B	11.6	0.561	+ 0.000 D/V
# 22 Jibboom St/ I St	C	21.5	0.528	C	21.5	0.528	+ 0.000 D/V
# 23 3rd St/ L St	B	12.6	0.323	B	12.6	0.323	+ 0.000 D/V
# 27 3rd St/ E St	A	9.8	0.000	A	9.8	0.000	+ 0.000 D/V

```
--------------------------------------------------------------------------------
                           Raley's Landing Project
                       Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #1 3rd St/ C St
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.354
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      29              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  0  1   0  0  1! 0  0   1  0  1  0  1   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      12    7    44     8   12     2     0  377    20   120  325     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   12    7    44     8   12     2     0  377    20   120  325     4
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    12    7    44     8   12     2     0  377    20   120  325     4
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   12    7    44     8   12     2     0  377    20   120  325     4
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    12    7    44     8   12     2     0  377    20   120  325     4
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.63 0.37  1.00  0.36 0.55  0.09  1.00 1.00  1.00  1.00 0.99  0.01
Final Sat.:   979  571  1550   564  845   141  1550 1550  1550  1550 1531    19
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.01  0.03  0.01 0.01  0.01  0.00 0.24  0.01  0.08 0.21  0.21
Crit Vol:                 44     8                  377          120
Crit Moves:             ****  ****                 ****         ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                           Raley's Landing Project
                       Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #2 3rd St/ F St
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.099
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      25              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      10   57    42    33  116     4     9    8     6     1    2     5
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   10   57    42    33  116     4     9    8     6     1    2     5
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    10   57    42    33  116     4     9    8     6     1    2     5
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   10   57    42    33  116     4     9    8     6     1    2     5
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    10   57    42    33  116     4     9    8     6     1    2     5
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.58  0.42  1.00 0.97  0.03  1.00 0.57  0.43  1.00 0.29  0.71
Final Sat.:  1500  864   636  1500 1450    50  1500  857   643  1500  429  1071
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.07  0.07  0.02 0.08  0.08  0.01 0.01  0.01  0.00 0.00  0.00
Crit Vol:          99           33                9                           7
Crit Moves:       ****         ****             ****                        ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                           Raley's Landing Project
                       Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #3 3rd St/ G St
********************************************************************************
Average Delay (sec/veh):      1.3   Worst Case Level Of Service:       B[ 10.3]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  1  0  1    0  0  1! 0  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       4  109   168     47   74     3      1    2     6      3    0     1
Growth Adj:  1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00
Initial Bse:    4  109   168     47   74     3      1    2     6      3    0     1
User Adj:    1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00
PHF Volume:     4  109   168     47   74     3      1    2     6      3    0     1
Reduct Vol:     0    0     0      0    0     0      0    0     0      0    0     0
Final Vol.:     4  109   168     47   74     3      1    2     6      3    0     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1 xxxx   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   90 xxxx xxxxx   277 xxxx xxxxx   391  468    94   296 xxxx   116
Potent Cap.: 1518 xxxx xxxxx  1298 xxxx xxxxx   572  496   969   661 xxxx   942
Move Cap.:   1501 xxxx xxxxx  1298 xxxx xxxxx   545  471   955   632 xxxx   936
Volume/Cap:  0.00 xxxx  xxxx  0.04 xxxx  xxxx  0.00 0.00  0.01  0.00 xxxx  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.1 xxxx xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:  7.4 xxxx xxxxx   7.9 xxxx xxxxx  11.6 xxxx xxxxx  10.7 xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     B    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   760  xxxx xxxx   936
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   0.0 xxxxx xxxx   0.0
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   9.8 xxxxx xxxx   8.8
Shared LOS:     *    *     *     *    *     *     *    *     A     *    *     A
ApproachDel:     xxxxxx           xxxxxx             10.0             10.3
ApproachLOS:        *                *                A                B
```



```
--------------------------------------------------------------------------------
                           Raley's Landing Project
                       Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #4 3rd St/ W capitol
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.323
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       34              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include           Ignore
Min. Green:     0    0     0      0    0     0      0    0     0      0    0     0
Lanes:        0  1  0  0  0    0  0  1  0  1    1  0  0  0  1    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      71  190     0      0   69    25     26    0   120     34   62    92
Growth Adj:  1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00
Initial Bse:   71  190     0      0   69    25     26    0   120     34   62    92
User Adj:    1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  0.00
PHF Adj:     1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  0.00
PHF Volume:    71  190     0      0   69    25     26    0   120     34   62     0
Reduct Vol:     0    0     0      0    0     0      0    0     0      0    0     0
Reduced Vol:   71  190     0      0   69    25     26    0   120     34   62     0
PCE Adj:     1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  0.00
Final Vol.:    71  190     0      0   69    25     26    0   120     34   62     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500   1500 1500  1500   1500 1500  1500   1500 1500  1500
Adjustment:  1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00
Lanes:       0.27 0.73  0.00   0.00 1.00  1.00   1.00 0.00  1.00   1.00 1.00  1.00
Final Sat.:   408 1092     0      0 1500  1500   1500    0  1500   1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.17  0.00   0.00 0.05  0.02   0.02 0.00  0.08   0.02 0.04  0.00
Crit Vol:         261                  69                     120    34
Crit Moves:      ****                ****                    ****  ****
********************************************************************************
```

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #6 5th St/ C St
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.277
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       32              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      31   33    81    82   62    18     9  226    56   112  161    62
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   31   33    81    82   62    18     9  226    56   112  161    62
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    31   33    81    82   62    18     9  226    56   112  161    62
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   31   33    81    82   62    18     9  226    56   112  161    62
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    31   33    81    82   62    18     9  226    56   112  161    62
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 1.55  0.45  1.00 1.60  0.40  1.00 2.00  1.00
Final Sat.:  1500 1500  1500  1500 2325   675  1500 2404   596  1500 3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.02  0.05  0.05 0.03  0.03  0.01 0.09  0.09  0.07 0.05  0.04
Crit Vol:                 81    82                             141   112
Crit Moves:             ****  ****                            ****  ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #7 5th St/ F St
*******************************************************************************
Average Delay (sec/veh):      2.2   Worst Case Level Of Service:      B[ 10.5]
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0   0  1  0  1  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      18  105     1    10  183    20    14   11    26     3    5     8
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   18  105     1    10  183    20    14   11    26     3    5     8
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    18  105     1    10  183    20    14   11    26     3    5     8
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    18  105     1    10  183    20    14   11    26     3    5     8
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   7.5  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  208 xxxx xxxxx   110 xxxx xxxxx   316  364   111   267  374    64
Potent Cap.: 1375 xxxx xxxxx  1493 xxxx xxxxx   618  567   928   670  560   994
Move Cap.:   1369 xxxx xxxxx  1488 xxxx xxxxx   594  552   921   627  545   984
Volume/Cap:  0.01 xxxx  xxxx  0.01 xxxx  xxxx  0.02 0.02  0.03  0.00 0.01  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.7 xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  711 xxxxx  xxxx  724 xxxxx
SharedQueue:  0.0 xxxx xxxxx   0.0 xxxx xxxxx xxxxx  0.2 xxxxx xxxxx  0.1 xxxxx
Shrd StpDel:  7.7 xxxx xxxxx   7.4 xxxx xxxxx xxxxx 10.5 xxxxx xxxxx 10.1 xxxxx
Shared LOS:     A    *     *     A    *     *     *    B     *     *    B     *
ApproachDel:     xxxxxx           xxxxxx            10.5             10.1
ApproachLOS:        *                *                B                B
```

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-------------------------------------------------------------------------------
                          Raley's Landing Project
                     Existing Condition AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #8 5th St/ G St
*******************************************************************************
Average Delay (sec/veh):      0.4   Worst Case Level Of Service:       A[  9.7]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  1  0  1  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       2  120     6     4  224     0     1    1     4     3    0     2
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    2  120     6     4  224     0     1    1     4     3    0     2
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     2  120     6     4  224     0     1    1     4     3    0     2
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     2  120     6     4  224     0     1    1     4     3    0     2
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   7.5 xxxx   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  228 xxxx xxxxx   129 xxxx xxxxx   310  369   119   254 xxxx    76
Potent Cap.: 1352 xxxx xxxxx  1469 xxxx xxxxx   625  563   917   684 xxxx   976
Move Cap.:   1348 xxxx xxxxx  1466 xxxx xxxxx   614  558   911   675 xxxx   966
Volume/Cap:  0.00 xxxx  xxxx  0.00 xxxx  xxxx  0.00 0.00  0.00  0.00 xxxx  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.7 xxxx xxxxx   7.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  768 xxxxx  xxxx  767 xxxxx
SharedQueue:  0.0 xxxx xxxxx   0.0 xxxx xxxxx xxxxx  0.0 xxxxx xxxxx  0.0 xxxxx
Shrd StpDel:  7.7 xxxx xxxxx   7.5 xxxx xxxxx xxxxx  9.7 xxxxx xxxxx  9.7 xxxxx
Shared LOS:     A    *     *     A    *     *     *    A     *     *    A     *
ApproachDel:     xxxxxx           xxxxxx              9.7              9.7
ApproachLOS:        *                *                 A                A
```



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-------------------------------------------------------------------------------
                          Raley's Landing Project
                     Existing Condition AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM 4-Way Stop Method (Base Volume Alternative)
*******************************************************************************
Intersection #9 5th St/ West Capitol Ave
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap. (X):        0.186
Loss Time (sec):       0 (Y+R =  4 sec) Average Delay (sec/veh):        8.8
Optimal Cycle:         0              Level Of Service:                 A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  0  0  0    0  1  0  0  1    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    83   22    94   116   65     1     4   59    74
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    83   22    94   116   65     1     4   59    74
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0    83   22    94   116   65     1     4   59    74
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0    83   22    94   116   65     1     4   59    74
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0    0     0    83   22    94   116   65     1     4   59    74
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 0.00  0.00  0.79 0.21  1.00  1.00 0.98  0.02  1.00 0.44  0.56
Final Sat.:     0    0     0   485  129   753   624  674    10   615  323   405
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     xxxx xxxx  xxxx  0.17 0.17  0.12  0.19 0.10  0.10  0.01 0.18  0.18
Crit Moves:                   ****              ****                  ****
Delay/Veh:    0.0  0.0   0.0   9.5  9.5   7.9   9.6  8.3   8.3   8.4  8.5   8.5
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0   9.5  9.5   7.9   9.6  8.3   8.3   8.4  8.5   8.5
LOS by Move:    *    *     *     A    A     A     A    A     A     A    A     A
ApproachDel:     xxxxxx             8.7              9.1              8.5
Delay Adj:        xxxxx             1.00             1.00             1.00
ApprAdjDel:      xxxxxx             8.7              9.1              8.5
LOS by Appr:        *                A                A                A
*******************************************************************************
```

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--------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #11 Jefferson/ West capitol Ave
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.532
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       49              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     107  633    76    47  800   107   197  150   135    63   87    34
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  107  633    76    47  800   107   197  150   135    63   87    34
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   107  633    76    47  800   107   197  150   135    63   87    34
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  107  633    76    47  800   107   197  150   135    63   87    34
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   107  633    76    47  800   107   197  150   135    63   87    34
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.79  0.21  1.00 1.76  0.24  1.00 2.00  1.00  1.00 2.16  0.84
Final Sat.:  1500 2678   322  1500 2646   354  1500 3000  1500  1500 3236  1264
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.24  0.24  0.03 0.30  0.30  0.13 0.05  0.09  0.04 0.03  0.03
Crit Vol:     107                           454   197                     40
Crit Moves:  ****                          ****  ****                   ****
********************************************************************************
```



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--------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #12 Jefferson/ Sacramento Ave
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.615
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       59              Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include           Ignore          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  0  1  0   1  0  1  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     186  288   139    32  367    75    58  180   360   115  149    10
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  186  288   139    32  367    75    58  180   360   115  149    10
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Volume:   186  288   139    32  367    75    58  180     0   115  149    10
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  186  288   139    32  367    75    58  180     0   115  149    10
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
Final Vol.:   186  288   139    32  367    75    58  180     0   115  149    10
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 0.83  0.17  1.00 1.00  1.00  1.00 1.87  0.13
Final Sat.:  1500 1500  1500  1500 1245   255  1500 1500  1500  1500 2811   189
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.19  0.09  0.02 0.29  0.29  0.04 0.12  0.00  0.08 0.05  0.05
Crit Vol:     186                442              180          115
Crit Moves:  ****               ****             ****         ****
********************************************************************************
```

Raley's Landing Project
Existing Condition AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 SR 275 Ramp West Capitol/ Riske Ln

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: B[10.5]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	53	0	43	0	0	3	7	133	86	12	143	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	0	43	0	0	3	7	133	86	12	143	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	53	0	43	0	0	3	7	133	86	12	143	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	53	0	43	0	0	3	7	133	86	12	143	0
Critical Gap Module:												
Critical Gp:	7.5	xxxx	6.9	xxxxx	xxxx	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	286	xxxx	109	xxxx	xxxx	72	143	xxxx	xxxxx	219	xxxx	xxxxx
Potent Cap.:	650	xxxx	930	xxxx	xxxx	983	1452	xxxx	xxxxx	1362	xxxx	xxxxx
Move Cap.:	641	xxxx	930	xxxx	xxxx	983	1452	xxxx	xxxxx	1362	xxxx	xxxxx
Volume/Cap:	0.08	xxxx	0.05	xxxx	xxxx	0.00	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.7	7.5	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	A	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	745	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	10.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:	10.5			8.7			xxxxxx			xxxxxx		
ApproachLOS:	B			A			*			*		

Raley's Landing Project
Existing Condition AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #14 South River Rd/ US 50 WB Rmp

Cycle (sec): 100 Critical Vol./Cap. (X): 0.409
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 39 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 1 0 1			1 0 1 0 0			1 0 0 1 0			1 0 0 1 0		
Volume Module:												
Base Vol:	0	15	135	2	46	0	65	196	176	104	0	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	15	135	2	46	0	65	196	176	104	0	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	15	135	2	46	0	65	196	176	104	0	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	15	135	2	46	0	65	196	176	104	0	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	15	135	2	46	0	65	196	176	104	0	9
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.53	0.47	1.00	0.00	1.00
Final Sat.:	0	1500	1500	1500	1500	0	1500	790	710	1500	0	1500
Capacity Analysis Module:												
Vol/Sat:	0.00	0.01	0.09	0.00	0.03	0.00	0.04	0.25	0.25	0.07	0.00	0.01
Crit Vol:			135	2				372		104		
Crit Moves:			****	****				****		****		

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #15 South River Rd/ US 50 On Ramp
********************************************************************************
Average Delay (sec/veh):      2.9  Worst Case Level Of Service:      C[ 16.4]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Yield Sign       Yield Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0   0  1  0  0  1   0  0  0  0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     206  118     4     3  232    94     0    0     0     3    5     3
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  206  118     4     3  232    94     0    0     0     3    5     3
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   206  118     4     3  232    94     0    0     0     3    5     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:   206  118     4     3  232    94     0    0     0     3    5     3
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  326 xxxx xxxxx   122 xxxx xxxxx  xxxx xxxx xxxxx   820  864   120
Potent Cap.: 1245 xxxx xxxxx  1478 xxxx xxxxx  xxxx xxxx xxxxx   347  294   937
Move Cap.:   1245 xxxx xxxxx  1478 xxxx xxxxx  xxxx xxxx xxxxx   302  245   937
Volume/Cap:  0.17 xxxx  xxxx  0.00 xxxx  xxxx  xxxx xxxx  xxxx  0.01 0.02  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.6 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.5 xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  328 xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 16.4 xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    C     *
ApproachDel:     xxxxxx           xxxxxx           xxxxxx            16.4
ApproachLOS:        *                *                *                C
```



```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #17 Front St/ Capital Mall
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.434
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):        2.6
Optimal Cycle:       33               Level Of Service:                A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:           Include          Include          Include          Ignore
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  0  0  1   0  0  0  0  1   0  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    20     0    0    34     0 1427     5    27  444    71
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    20     0    0    34     0 1427     5    27  444    71
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Volume:     0    0    20     0    0    34     0 1427     5    27  444     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0    20     0    0    34     0 1427     5    27  444     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:     0    0    20     0    0    34     0 1427     5    27  444     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  0.84  1.00 1.00  0.82  1.00 0.95  0.95  0.95 0.95  1.00
Lanes:       0.00 0.00  1.00  0.00 0.00  1.00  0.00 1.99  0.01  1.00 2.00  1.00
Final Sat.:     0    0  1593     0    0  1551     0 3597    13  1805 3610  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.01  0.00 0.00  0.02  0.00 0.40  0.40  0.01 0.12  0.00
Crit Moves:                               ****       ****       ****
Green/Cycle: 0.00 0.00  0.05  0.00 0.00  0.05  0.00 0.91  0.91  0.03 0.95  0.00
Volume/Cap:  0.00 0.00  0.25  0.00 0.00  0.43  0.00 0.43  0.43  0.43 0.13  0.00
Delay/Veh:    0.0  0.0  47.3   0.0  0.0  49.9   0.0  0.7   0.7  52.1  0.2   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  47.3   0.0  0.0  49.9   0.0  0.7   0.7  52.1  0.2   0.0
HCM2kAvg:       0    0     1     0    0     2     0    4     4     1    1     0
********************************************************************************
```

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-------------------------------------------------------------------------------
                          Raley's Landing Project
                     Existing Condition AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #18 3rd St/ Capital Mall
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.390
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):       18.8
Optimal Cycle:       30              Level Of Service:                 B
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  1  2  0  1   0  0  2  1  0   1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  214  520     5    0  756    23   61  134     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  214  520     5    0  756    23   61  134     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  214  520     5    0  756    23   61  134     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  214  520     5    0  756    23   61  134     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0  214  520     5    0  756    23   61  134     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.70 0.70  0.77 1.00 0.82  0.82 0.86 0.86  1.00
Lanes:       0.00 0.00  0.00 0.87 2.13  1.00 0.00 2.91  0.09 1.00 2.00  0.00
Final Sat.:    0    0     0 1157 2811  1454    0 4512   137 1625 3249     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.18 0.18  0.00 0.00 0.17  0.17 0.04 0.04  0.00
Crit Moves:                       ****              ****       ****
Green/Cycle: 0.00 0.00  0.00 0.47 0.47  0.47 0.00 0.43  0.43 0.10 0.53  0.00
Volume/Cap:  0.00 0.00  0.00 0.39 0.39  0.01 0.00 0.39  0.39 0.39 0.08  0.00
Delay/Veh:    0.0  0.0   0.0 17.1 17.1  13.9  0.0 19.7  19.7 44.0 11.7   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 17.1 17.1  13.9  0.0 19.7  19.7 44.0 11.7   0.0
HCM2kAvg:       0    0     0    6    6     0    0    6     6    2    1     0
*******************************************************************************
```



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-------------------------------------------------------------------------------
                          Raley's Landing Project
                     Existing Condition AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #19 3rd St/ J St
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.909
Loss Time (sec):     15 (Y+R =  4 sec) Average Delay (sec/veh):       38.0
Optimal Cycle:      119              Level Of Service:                 D
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0   24     0    0   15     0
Lanes:        0  0  0  0  2   1  0  2  0  0   0  1  2  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    54  104  102     0    8 1505   438   10 1549   140
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0    54  104  102     0    8 1505   438   10 1549   140
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0    54  104  102     0    8 1505   438   10 1549   140
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0    54  104  102     0    8 1505   438   10 1549   140
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0    54  104  102     0    8 1505   438   10 1549   140
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  0.67 0.69 0.86  1.00 0.79 0.79  0.79 0.81 0.81  0.81
Lanes:       0.00 0.00  2.00 1.00 2.00  0.00 0.02 3.08  0.90 0.02 2.73  0.25
Final Sat.:    0    0  2539 1305 3249     0   25 4638  1350   27 4205   380
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.02 0.08 0.03  0.00 0.32 0.32  0.32 0.37 0.37  0.37
Crit Moves:                  ****              ****             ****
Green/Cycle: 0.00 0.00  0.09 0.09 0.09  0.00 0.36 0.36  0.36 0.41 0.41  0.41
Volume/Cap:  0.00 0.00  0.24 0.91 0.36  0.00 0.91 0.91  0.91 0.91 0.91  0.91
Delay/Veh:    0.0  0.0  43.1 101.6 43.7  0.0 36.8 36.8  36.8 35.0 35.0  35.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  43.1 101.6 43.7  0.0 36.8 36.8  36.8 35.0 35.0  35.0
HCM2kAvg:       0    0     1    7    2     0   18   18    18   20   20    20
*******************************************************************************
```

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------------------------------------------------------------------------------
                         Raley's Landing Project
                     Existing Condition AM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #20 3rd St/ P St
******************************************************************************
Cycle (sec):          50               Critical Vol./Cap. (X):        0.280
Loss Time (sec):      10 (Y+R =  4 sec) Average Delay (sec/veh):        9.8
Optimal Cycle:        26               Level Of Service:                 A
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  1  1  1   0  0  0  0  0   0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  261   148    0    0     0  148  484     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0    0  261   148    0    0     0  148  484     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0    0  261   148    0    0     0  148  484     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  261   148    0    0     0  148  484     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0    0  261   148    0    0     0  148  484     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.81  0.81 1.00 1.00  1.00 0.82 0.82  1.00
Lanes:       0.00 0.00  0.00 0.00 1.91  1.09 0.00 0.00  0.00 0.70 2.30  0.00
Final Sat.:    0    0     0    0 2942  1668    0    0     0 1093 3575     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.09  0.09 0.00 0.00  0.00 0.14 0.14  0.00
Crit Moves:                       ****                            ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.32  0.32 0.00 0.00  0.00 0.48 0.48  0.00
Volume/Cap:  0.00 0.00  0.00 0.00 0.28  0.28 0.00 0.00  0.00 0.28 0.28  0.00
Delay/Veh:    0.0  0.0   0.0  0.0 12.9  12.9  0.0  0.0   0.0  7.8  7.8   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0 12.9  12.9  0.0  0.0   0.0  7.8  7.8   0.0
HCM2kAvg:       0    0     0    0    2     2    0    0     0    2    2     0
******************************************************************************
```



```
------------------------------------------------------------------------------
                         Raley's Landing Project
                     Existing Condition AM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #21 3rd St/ Q St
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap. (X):        0.561
Loss Time (sec):      10 (Y+R =  4 sec) Average Delay (sec/veh):       11.6
Optimal Cycle:        40               Level Of Service:                 B
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  1  2  0  0   0  0  3  1  0   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  177  218     0    0 2134   260    0    0     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  177  218     0    0 2134   260    0    0     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  177  218     0    0 2134   260    0    0     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  177  218     0    0 2134   260    0    0     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0  177  218     0    0 2134   260    0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.82 0.82  1.00 1.00 0.81  0.81 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.00 2.00  0.00 0.00 3.57  0.43 0.00 0.00  0.00
Final Sat.:    0    0     0 1556 3112     0    0 5460   665    0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.11 0.07  0.00 0.00 0.39  0.39 0.00 0.00  0.00
Crit Moves:                  ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.20 0.20  0.00 0.00 0.70  0.70 0.00 0.00  0.00
Volume/Cap:  0.00 0.00  0.00 0.56 0.35  0.00 0.00 0.56  0.56 0.00 0.00  0.00
Delay/Veh:    0.0  0.0   0.0 36.9 34.3   0.0  0.0  7.7   7.7  0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 36.9 34.3   0.0  0.0  7.7   7.7  0.0  0.0   0.0
HCM2kAvg:       0    0     0    6    3     0    0   10    10    0    0     0
******************************************************************************
```

```
--------------------------------------------------------------------------------
                            Raley's Landing Project
                        Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #22 Jibboom St/ I St
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.528
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):       21.5
Optimal Cycle:      39              Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  0  0  0   0  0  1! 0  0   1  0  1  0  0   0  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    0  107    0  376  310  144    0    0   90    7
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:    0    0    0  107    0  376  310  144    0    0   90    7
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:     0    0    0  107    0  376  310  144    0    0   90    7
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:    0    0    0  107    0  376  310  144    0    0   90    7
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:     0    0    0  107    0  376  310  144    0    0   90    7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  1.00 1.00 1.00 0.83 1.00 0.82 0.95 1.00 1.00 1.00 1.00 0.85
Lanes:       0.00 0.00 0.00 0.22 0.00 0.78 1.00 1.00 0.00 0.00 1.00 1.00
Final Sat.:     0    0    0  346    0 1216 1805 1900    0    0 1900 1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00 0.31 0.00 0.31 0.17 0.08 0.00 0.00 0.05 0.00
Crit Moves:                 ****           ****                     ****
Green/Cycle: 0.00 0.00 0.00 0.59 0.00 0.59 0.33 0.41 0.00 0.00 0.09 0.09
Volume/Cap:  0.00 0.00 0.00 0.53 0.00 0.53 0.53 0.18 0.00 0.00 0.53 0.05
Delay/Veh:    0.0  0.0  0.0 13.0  0.0 13.0 28.4 18.6  0.0  0.0 46.6 41.8
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:   0.0  0.0  0.0 13.0  0.0 13.0 28.4 18.6  0.0  0.0 46.6 41.8
HCM2kAvg:       0    0    0   10    0   10    8    3    0    0    3    0
********************************************************************************
```



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--------------------------------------------------------------------------------
                            Raley's Landing Project
                        Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #23 3rd St/ L St
********************************************************************************
Cycle (sec):        70              Critical Vol./Cap. (X):        0.323
Loss Time (sec):    10 (Y+R =  4 sec) Average Delay (sec/veh):       12.6
Optimal Cycle:      28              Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include           Ignore
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  0  0  0   0  0  2  1  0   0  0  0  0  0   1  1  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    0    0  605  131    0    0    0   99  318   58
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:    0    0    0    0  605  131    0    0    0   99  318   58
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00
PHF Volume:     0    0    0    0  605  131    0    0    0   99  318    0
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:    0    0    0    0  605  131    0    0    0   99  318    0
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00
Final Vol.:     0    0    0    0  605  131    0    0    0   99  318    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  1.00 1.00 1.00 1.00 0.80 0.80 1.00 1.00 1.00 0.73 0.73 1.00
Lanes:       0.00 0.00 0.00 0.00 2.47 0.53 0.00 0.00 0.00 1.00 2.00 1.00
Final Sat.:     0    0    0    0 3734  808    0    0    0 1381 2762 1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00 0.00 0.16 0.16 0.00 0.00 0.00 0.07 0.12 0.00
Crit Moves:                      ****                               ****
Green/Cycle: 0.00 0.00 0.00 0.00 0.50 0.50 0.00 0.00 0.00 0.36 0.36 0.00
Volume/Cap:  0.00 0.00 0.00 0.00 0.32 0.32 0.00 0.00 0.00 0.20 0.32 0.00
Delay/Veh:    0.0  0.0  0.0  0.0 10.5 10.5  0.0  0.0  0.0 15.7 16.5  0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:   0.0  0.0  0.0  0.0 10.5 10.5  0.0  0.0  0.0 15.7 16.5  0.0
HCM2kAvg:       0    0    0    0    3    3    0    0    0    2    3    0
********************************************************************************
```

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--------------------------------------------------------------------------------
                         Raley's Landing Project
                     Existing Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #27 3rd St/ E St
********************************************************************************
Average Delay (sec/veh):      0.8   Worst Case Level Of Service:      A[  9.8]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    1  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       2   62     2     5  121     4     4    0     8     1    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    2   62     2     5  121     4     4    0     8     1    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     2   62     2     5  121     4     4    0     8     1    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     2   62     2     5  121     4     4    0     8     1    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1 xxxx   6.2   7.1 xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5 xxxx   3.3   3.5 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  125 xxxx xxxxx    64 xxxx xxxxx   200 xxxx   123   204 xxxx xxxxx
Potent Cap.: 1474 xxxx xxxxx  1551 xxxx xxxxx   763 xxxx   933   758 xxxx xxxxx
Move Cap.:   1474 xxxx xxxxx  1551 xxxx xxxxx   760 xxxx   933   749 xxxx xxxxx
Volume/Cap:  0.00 xxxx  xxxx  0.00 xxxx  xxxx  0.01 xxxx  0.01  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:  7.4 xxxx xxxxx   7.3 xxxx xxxxx xxxxx xxxx xxxxx   9.8 xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  868 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.0 xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.2 xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    A     *     *    *     *
ApproachDel:     xxxxxx           xxxxxx              9.2              9.8
ApproachLOS:        *                *                A                A
```

Intersection Capacity Analysis

Existing Condition

PM Peak Hour Scenario

Raley's Landing Project
Existing Condition PM Peak Hour

Scenario Report

Scenario:	Existing Pm
Command:	Existing PM
Volume:	Existing PM
Geometry:	Existing PM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Existing Condition PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 3rd St/ C St	A	xxxxx	0.405	A	xxxxx	0.405	+ 0.000 V/C
# 2 3rd St/ F St	A	xxxxx	0.161	A	xxxxx	0.161	+ 0.000 V/C
# 3 3rd St/ G St	B	11.1	0.000	B	11.1	0.000	+ 0.000 D/V
# 4 3rd St/ W capitol	A	xxxxx	0.384	A	xxxxx	0.384	+ 0.000 V/C
# 6 5th St/ C St	A	xxxxx	0.339	A	xxxxx	0.339	+ 0.000 V/C
# 7 5th St/ F St	B	11.5	0.000	B	11.5	0.000	+ 0.000 D/V
# 8 5th St/ G St	B	10.5	0.000	B	10.5	0.000	+ 0.000 D/V
# 9 5th St/ West Capitol Ave	B	10.4	0.363	B	10.4	0.363	+ 0.000 V/C
# 11 Jefferson/ West capitol Ave	C	xxxxx	0.707	C	xxxxx	0.707	+ 0.000 V/C
# 12 Jefferson/ Sacramento Ave	C	xxxxx	0.731	C	xxxxx	0.731	+ 0.000 V/C
# 13 SR 275 Ramp West Capitol/ Risk	C	15.5	0.000	C	15.5	0.000	+ 0.000 D/V
# 14 South River Rd/ US 50 WB Rmp	A	xxxxx	0.355	A	xxxxx	0.355	+ 0.000 V/C
# 15 South River Rd/ US 50 On Ramp	A	8.9	0.000	A	8.9	0.000	+ 0.000 D/V
# 17 Front St/ Capital Mall	A	5.4	0.330	A	5.4	0.330	+ 0.000 D/V
# 18 3rd St/ Capital Mall	C	20.7	0.456	C	20.7	0.456	+ 0.000 D/V
# 19 3rd St/ J St	C	27.6	0.516	C	27.6	0.516	+ 0.000 D/V
# 20 3rd St/ P St	B	15.4	0.831	B	15.4	0.831	+ 0.000 D/V
# 21 3rd St/ Q St	B	16.6	0.232	B	16.6	0.232	+ 0.000 D/V
# 22 Jibboom St/ I St	C	24.5	0.611	C	24.5	0.611	+ 0.000 D/V
# 23 3rd St/ L St	B	17.0	0.835	B	17.0	0.835	+ 0.000 D/V
# 27 3rd St/ E St	B	10.6	0.000	B	10.6	0.000	+ 0.000 D/V

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #1 3rd St/ C St
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):         0.405
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       31              Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  0  1   0  0  1! 0  0   1  0  1  0  1   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      36   14   152     5    4     3     3  411    22    59  445    13
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   36   14   152     5    4     3     3  411    22    59  445    13
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    36   14   152     5    4     3     3  411    22    59  445    13
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   36   14   152     5    4     3     3  411    22    59  445    13
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    36   14   152     5    4     3     3  411    22    59  445    13
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.72 0.28  1.00  0.42 0.33  0.25  1.00 1.00  1.00  1.00 0.97  0.03
Final Sat.:  1116  434  1550   646  517   388  1550 1550  1550  1550 1506    44
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.03  0.10  0.01 0.01  0.01  0.00 0.27  0.01  0.04 0.30  0.30
Crit Vol:               152     5                     411          59
Crit Moves:            ****  ****                    ****        ****
********************************************************************************
```



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--------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #2 3rd St/ F St
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):         0.161
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       27              Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      11  161    14     1   69     8    10    0     8    52    5    50
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   11  161    14     1   69     8    10    0     8    52    5    50
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    11  161    14     1   69     8    10    0     8    52    5    50
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   11  161    14     1   69     8    10    0     8    52    5    50
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    11  161    14     1   69     8    10    0     8    52    5    50
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.92  0.08  1.00 0.90  0.10  1.00 0.00  1.00  1.00 0.09  0.91
Final Sat.:  1500 1380   120  1500 1344   156  1500    0  1500  1500  136  1364
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.12  0.12  0.00 0.05  0.05  0.01 0.00  0.01  0.03 0.04  0.04
Crit Vol:           175          1                10                          55
Crit Moves:        ****       ****              ****                        ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                         Raley's Landing Project
                     Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #3 3rd St/ G St
********************************************************************************
Average Delay (sec/veh):      4.7   Worst Case Level Of Service:      B[ 11.1]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:         1  0  1  0  1    0  0  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        3  137     1     0  129     1     2    0     5   140    1    47
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     3  137     1     0  129     1     2    0     5   140    1    47
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      3  137     1     0  129     1     2    0     5   140    1    47
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      3  137     1     0  129     1     2    0     5   140    1    47
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   7.1 xxxx   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  130 xxxx xxxxx  xxxx xxxx xxxxx   297 xxxx   130   275  273   137
Potent Cap.: 1468 xxxx xxxxx  xxxx xxxx xxxxx   659 xxxx   926   681  637   917
Move Cap.:   1468 xxxx xxxxx  xxxx xxxx xxxxx   624 xxxx   926   677  636   917
Volume/Cap:  0.00 xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  0.01  0.21 0.00  0.05
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:         0.0 xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.8 xxxx xxxxx
Stopped Del:   7.5 xxxx xxxxx xxxxx xxxx xxxxx  10.8 xxxx xxxxx  11.7 xxxx xxxxx
LOS by Move:     A    *     *     *    *     *     B    *     *     B    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   926  xxxx xxxx   909
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   0.0 xxxxx xxxx   0.2
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   8.9 xxxxx xxxx   9.2
Shared LOS:     *    *     *     *    *     *     *    *     A     *    *     A
ApproachDel:    xxxxxx           xxxxxx              9.4             11.1
ApproachLOS:       *                *                 A                B
```



```
--------------------------------------------------------------------------------
                         Raley's Landing Project
                     Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #4 3rd St/ W capitol
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.384
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       37              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include           Ignore
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:         0  1  0  0  0    0  0  1  0  1    1  0  0  0  1    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       37   86     0     0  226    42    34    0   155    72  143    71
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    37   86     0     0  226    42    34    0   155    72  143    71
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Volume:     37   86     0     0  226    42    34    0   155    72  143     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    37   86     0     0  226    42    34    0   155    72  143     0
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:     37   86     0     0  226    42    34    0   155    72  143     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:        0.30 0.70  0.00  0.00 1.00  1.00  1.00 0.00  1.00  1.00 1.00  1.00
Final Sat.:    451 1049     0     0 1500  1500  1500    0  1500  1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.08 0.08  0.00  0.00 0.15  0.03  0.02 0.00  0.10  0.05 0.10  0.00
Crit Vol:          123              226                      155    72
Crit Moves:       ****             ****                     ****  ****
********************************************************************************
```

Raley's Landing Project
Existing Condition PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #6 5th St/ C St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.339
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 1 0			1 0 1 1 0			1 0 1 1 0			1 0 2 0 1		
Volume Module:												
Base Vol:	92	91	183	59	61	15	18	227	48	129	349	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	91	183	59	61	15	18	227	48	129	349	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	91	183	59	61	15	18	227	48	129	349	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	91	183	59	61	15	18	227	48	129	349	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	92	91	183	59	61	15	18	227	48	129	349	90
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.61	0.39	1.00	1.65	0.35	1.00	2.00	1.00
Final Sat.:	1500	1500	1500	1500	2408	592	1500	2476	524	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.12	0.04	0.03	0.03	0.01	0.09	0.09	0.09	0.12	0.06
Crit Vol:			183	59					138	129		
Crit Moves:			****	****					****	****		

Raley's Landing Project
Existing Condition PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 5th St/ F St

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: B[11.5]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0 1 0			0 1 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	23	250	5	5	157	11	35	8	38	6	7	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	250	5	5	157	11	35	8	38	6	7	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	23	250	5	5	157	11	35	8	38	6	7	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	23	250	5	5	157	11	35	8	38	6	7	6
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	168	xxxx	xxxxx	255	xxxx	xxxxx	347	474	84	391	477	128
Potent Cap.:	1422	xxxx	xxxxx	1322	xxxx	xxxxx	588	492	965	548	490	905
Move Cap.:	1422	xxxx	xxxxx	1322	xxxx	xxxxx	569	482	965	511	480	905
Volume/Cap:	0.02	xxxx	xxxx	0.00	xxxx	xxxx	0.06	0.02	0.04	0.01	0.01	0.01
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.6	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	689	xxxxx	xxxx	577	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	0.1	xxxxx
Shrd StpDel:	7.6	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	10.9	xxxxx	xxxxx	11.5	xxxxx
Shared LOS:	A	*	*	A	*	*	*	B	*	*	B	*
ApproachDel:		xxxxxx			xxxxxx			10.9			11.5	
ApproachLOS:		*			*			B			B	

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--------------------------------------------------------------------------------
                            Raley's Landing Project
                       Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #8 5th St/ G St
********************************************************************************
Average Delay (sec/veh):      0.5   Worst Case Level Of Service:       B[ 10.5]
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include         Include          Include
Lanes:         0  1  0  1  0   0  1  0  1  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        4  279     1     6  194     3     2    0     6     1    2     6
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     4  279     1     6  194     3     2    0     6     1    2     6
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      4  279     1     6  194     3     2    0     6     1    2     6
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      4  279     1     6  194     3     2    0     6     1    2     6
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5 xxxx   6.9   7.5  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5 xxxx   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  208 xxxx xxxxx   291 xxxx xxxxx   378 xxxx   121   418  518   162
Potent Cap.: 1375 xxxx xxxxx  1282 xxxx xxxxx   559 xxxx   915   524  464   861
Move Cap.:   1362 xxxx xxxxx  1271 xxxx xxxxx   540 xxxx   898   508  452   845
Volume/Cap:  0.00 xxxx  xxxx  0.00 xxxx  xxxx  0.00 xxxx  0.01  0.00 0.00  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.7 xxxx xxxxx   7.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  770 xxxxx  xxxx  667 xxxxx
SharedQueue:  0.0 xxxx xxxxx   0.0 xxxx xxxxx xxxxx  0.0 xxxxx xxxxx  0.0 xxxxx
Shrd StpDel:  7.7 xxxx xxxxx   7.8 xxxx xxxxx xxxxx  9.7 xxxxx xxxxx 10.5 xxxxx
Shared LOS:     A    *     *     A    *     *     *    A     *     *    B     *
ApproachDel:      xxxxxx           xxxxxx             9.7             10.5
ApproachLOS:         *                *                A                B
```



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--------------------------------------------------------------------------------
                            Raley's Landing Project
                       Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #9 5th St/ West Capitol Ave
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap. (X):        0.363
Loss Time (sec):       0 (Y+R =  4 sec) Average Delay (sec/veh):       10.4
Optimal Cycle:         0              Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  0  0  0   0  1  0  0  1   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        0    0     0    81   40   152   179  109    10    24  162    75
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     0    0     0    81   40   152   179  109    10    24  162    75
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      0    0     0    81   40   152   179  109    10    24  162    75
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     0    0     0    81   40   152   179  109    10    24  162    75
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:      0    0     0    81   40   152   179  109    10    24  162    75
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:        0.00 0.00  0.00  0.67 0.33  1.00  1.00 0.92  0.08  1.00 0.68  0.32
Final Sat.:      0    0     0   372  184   660   583  585    54   573  446   206
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      xxxx xxxx  xxxx  0.22 0.22  0.23  0.31 0.19  0.19  0.04 0.36  0.36
Crit Moves:                               ****  ****                   ****
Delay/Veh:     0.0  0.0   0.0  10.5 10.5   9.3  11.3  9.3   9.3   9.0 10.9  10.9
Delay Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:    0.0  0.0   0.0  10.5 10.5   9.3  11.3  9.3   9.3   9.0 10.9  10.9
LOS by Move:     *    *     *     B    B     A     B    A     A     A    B     B
ApproachDel:      xxxxxx             9.8              10.5             10.8
Delay Adj:         xxxxx            1.00              1.00             1.00
ApprAdjDel:       xxxxxx             9.8              10.5             10.8
LOS by Appr:         *                A                 B                B
********************************************************************************
```

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------------------------------------------------------------------------------
                       Raley's Landing Project
                   Existing Condition PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
******************************************************************************
Intersection #11 Jefferson/ West capitol Ave
******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.707
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       78              Level Of Service:                  C
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     202  747   110    50  656   150   261  295   238   218  316   110
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  202  747   110    50  656   150   261  295   238   218  316   110
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   202  747   110    50  656   150   261  295   238   218  316   110
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  202  747   110    50  656   150   261  295   238   218  316   110
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   202  747   110    50  656   150   261  295   238   218  316   110
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.74  0.26  1.00 1.63  0.37  1.00 2.00  1.00  1.00 2.23  0.77
Final Sat.:  1500 2615   385  1500 2442   558  1500 3000  1500  1500 3338  1162
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.29  0.29  0.03 0.27  0.27  0.17 0.10  0.16  0.15 0.09  0.09
Crit Vol:     202                     403                   238   218
Crit Moves:  ****                    ****                  ****  ****
******************************************************************************
```



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------------------------------------------------------------------------------
                       Raley's Landing Project
                   Existing Condition PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
******************************************************************************
Intersection #12 Jefferson/ Sacramento Ave
******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.731
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       85              Level Of Service:                  C
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include           Ignore          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  0  1  0   1  0  1  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     401  389   205    16  226    74   130  196   314   200  237    26
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  401  389   205    16  226    74   130  196   314   200  237    26
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Volume:   401  389   205    16  226    74   130  196     0   200  237    26
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  401  389   205    16  226    74   130  196     0   200  237    26
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
Final Vol.:   401  389   205    16  226    74   130  196     0   200  237    26
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 0.75  0.25  1.00 1.00  1.00  1.00 1.80  0.20
Final Sat.:  1500 1500  1500  1500 1130   370  1500 1500  1500  1500 2703   297
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.27 0.26  0.14  0.01 0.20  0.20  0.09 0.13  0.00  0.13 0.09  0.09
Crit Vol:     401                     300              196         200
Crit Moves:  ****                    ****             ****        ****
******************************************************************************
```

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--------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #13 SR 275 Ramp West Capitol/ Riske Ln
********************************************************************************
Average Delay (sec/veh):      3.0   Worst Case Level Of Service:      C[ 15.5]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  0  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      118    0    35     0    0     6    13  243   131     9  315     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   118    0    35     0    0     6    13  243   131     9  315     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    118    0    35     0    0     6    13  243   131     9  315     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    118    0    35     0    0     6    13  243   131     9  315     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5 xxxx   6.9 xxxxx xxxx   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  510 xxxx   187  xxxx xxxx   158   315 xxxx xxxxx   374 xxxx xxxxx
Potent Cap.:  451 xxxx   830  xxxx xxxx   866  1257 xxxx xxxxx  1196 xxxx xxxxx
Move Cap.:    442 xxxx   830  xxxx xxxx   866  1257 xxxx xxxxx  1196 xxxx xxxxx
Volume/Cap:  0.27 xxxx  0.04  xxxx xxxx  0.01  0.01 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx   0.0   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx   9.2   7.9 xxxx xxxxx   8.0 xxxx xxxxx
LOS by Move:    *    *     *     *    *     A     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  495 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  1.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx 15.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     *    *     *
ApproachDel:        15.5              9.2            xxxxxx           xxxxxx
ApproachLOS:          C                A                *                *
```



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--------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
              Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #14 South River Rd/ US 50 WB Rmp
********************************************************************************
Cycle (sec):        100                Critical Vol./Cap. (X):        0.355
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       35                Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  1  0  1   1  0  1  0  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        0   16    43     3   70     0    40   49    93   320    0     7
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     0   16    43     3   70     0    40   49    93   320    0     7
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      0   16    43     3   70     0    40   49    93   320    0     7
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     0   16    43     3   70     0    40   49    93   320    0     7
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:      0   16    43     3   70     0    40   49    93   320    0     7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:        0.00 1.00  1.00  1.00 1.00  0.00  1.00 0.35  0.65  1.00 0.00  1.00
Final Sat.:      0 1500  1500  1500 1500     0  1500  518   982  1500    0  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.01  0.03  0.00 0.05  0.00  0.03 0.09  0.09  0.21 0.00  0.00
Crit Vol:        0                    70                 142         320
Crit Moves:   ****                  ****               ****        ****
********************************************************************************
```

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------------------------------------------------------------------------------
                        Raley's Landing Project
                    Existing Condition PM Peak Hour
------------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #15 South River Rd/ US 50 On Ramp
******************************************************************************
Average Delay (sec/veh):      1.7   Worst Case Level Of Service:       A[  8.9]
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled     Yield Sign       Yield Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  1  0  0  1    0  0  0  0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     141   86     0     1  233   266     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  141   86     0     1  233   266     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   141   86     0     1  233   266     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:   141   86     0     1  233   266     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  499 xxxx xxxxx    86 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: 1075 xxxx xxxxx  1523 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   1075 xxxx xxxxx  1523 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.13 xxxx  xxxx  0.00 xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.5 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.9 xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    *     *
ApproachDel:     xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        *                *                *                *
```



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------------------------------------------------------------------------------
                        Raley's Landing Project
                    Existing Condition PM Peak Hour
------------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #17 Front St/ Capital Mall
******************************************************************************
Cycle (sec):        100             Critical Vol./Cap. (X):        0.330
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      5.4
Optimal Cycle:       28             Level Of Service:                  A
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:           Include          Include          Include           Ignore
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  1  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     1     0    0    92     0  803     8    27  960   173
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     1     0    0    92     0  803     8    27  960   173
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Volume:     0    0     1     0    0    92     0  803     8    27  960     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     1     0    0    92     0  803     8    27  960     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:     0    0     1     0    0    92     0  803     8    27  960     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  0.83  1.00 1.00  0.75  1.00 0.95  0.95  0.95 0.95  1.00
Lanes:       0.00 0.00  1.00  0.00 0.00  1.00  0.00 1.98  0.02  1.00 2.00  1.00
Final Sat.:     0    0  1570     0    0  1431     0 3571    36  1805 3610  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.00 0.00  0.06  0.00 0.22  0.22  0.01 0.27  0.00
Crit Moves:                               ****  ****                  ****
Green/Cycle: 0.00 0.00  0.19  0.00 0.00  0.19  0.00 0.76  0.76  0.05 0.81  0.00
Volume/Cap:  0.00 0.00  0.00  0.00 0.00  0.33  0.00 0.30  0.30  0.30 0.33  0.00
Delay/Veh:    0.0  0.0  32.5   0.0  0.0  35.4   0.0  3.9   3.9  47.6  2.6   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  32.5   0.0  0.0  35.4   0.0  3.9   3.9  47.6  2.6   0.0
HCM2kAvg:       0    0     0     0    0     3     0    4     4     1    4     0
******************************************************************************
```

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--------------------------------------------------------------------------------
                           Raley's Landing Project
                       Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #18 3rd St/ Capital Mall
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.456
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):       20.7
Optimal Cycle:       34              Level Of Service:                 C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  1  2  0  1   0  0  2  1  0   1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0   55  933    27    0  402    39  181  441     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0   55  933    27    0  402    39  181  441     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0   55  933    27    0  402    39  181  441     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0   55  933    27    0  402    39  181  441     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0   55  933    27    0  402    39  181  441     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.70 0.70  0.77 1.00 0.81  0.81 0.86 0.86  1.00
Lanes:       0.00 0.00  0.00 0.17 2.83  1.00 0.00 2.73  0.27 1.00 2.00  0.00
Final Sat.:    0    0     0  221 3747  1454    0 4200   407 1625 3249     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.25 0.25  0.02 0.00 0.10  0.10 0.11 0.14  0.00
Crit Moves:                       ****              ****       ****
Green/Cycle: 0.00 0.00  0.00 0.55 0.55  0.55 0.00 0.21  0.21 0.24 0.45  0.00
Volume/Cap:  0.00 0.00  0.00 0.46 0.46  0.03 0.00 0.46  0.46 0.46 0.30  0.00
Delay/Veh:    0.0  0.0   0.0 13.9 13.9  10.5  0.0 34.9  34.9 33.0 17.4   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 13.9 13.9  10.5  0.0 34.9  34.9 33.0 17.4   0.0
HCM2kAvg:       0    0     0    7    7     0    0    4     4    5    4     0
********************************************************************************
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--------------------------------------------------------------------------------
                           Raley's Landing Project
                       Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #19 3rd St/ J St
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.516
Loss Time (sec):     15 (Y+R =  4 sec) Average Delay (sec/veh):       27.6
Optimal Cycle:       54              Level Of Service:                 C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0   24     0    0   15     0
Lanes:        0  0  0  0  2   1  0  2  0  0   0  1  2  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0   163  213  344     0    7  814   289    7  328    83
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0   163  213  344     0    7  814   289    7  328    83
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0   163  213  344     0    7  814   289    7  328    83
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0   163  213  344     0    7  814   289    7  328    83
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0   163  213  344     0    7  814   289    7  328    83
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  0.67 0.69 0.86  1.00 0.79 0.79  0.79 0.79 0.79  0.79
Lanes:       0.00 0.00  2.00 1.00 2.00  0.00 0.03 2.97  1.00 0.05 2.35  0.60
Final Sat.:    0    0  2533 1305 3249     0   38 4448  1495   76 3550   898
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.06 0.16 0.11  0.00 0.18 0.18  0.19 0.09 0.09  0.09
Crit Moves:                  ****                   ****            ****
Green/Cycle: 0.00 0.00  0.32 0.32 0.32  0.00 0.37 0.37  0.37 0.18 0.18  0.18
Volume/Cap:  0.00 0.00  0.20 0.52 0.33  0.00 0.49 0.49  0.52 0.52 0.52  0.52
Delay/Veh:    0.0  0.0  25.1 29.1 26.3   0.0 24.1 24.1  24.5 37.7 37.7  37.7
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  25.1 29.1 26.3   0.0 24.1 24.1  24.5 37.7 37.7  37.7
HCM2kAvg:       0    0     2    7    4     0    7    7     7    5    5     5
********************************************************************************
```

```
--------------------------------------------------------------------------------
                        Raley's Landing Project
                    Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #20 3rd St/ P St
********************************************************************************
Cycle (sec):        50              Critical Vol./Cap. (X):        0.831
Loss Time (sec):    10 (Y+R =  4 sec) Average Delay (sec/veh):      15.4
Optimal Cycle:      60              Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  0  0  0   0  0  1  1  1   0  0  0  0  0   0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    0    0  322  621    0    0    0  121 1962    0
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:   0    0    0    0  322  621    0    0    0  121 1962    0
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    0    0    0    0  322  621    0    0    0  121 1962    0
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   0    0    0    0  322  621    0    0    0  121 1962    0
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:    0    0    0    0  322  621    0    0    0  121 1962    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  1.00 1.00 1.00 1.00 0.77 0.75 1.00 1.00 1.00 0.81 0.82 1.00
Lanes:       0.00 0.00 0.00 0.00 1.01 1.99 0.00 0.00 0.00 0.18 2.82 0.00
Final Sat.:    0    0    0    0 1475 2845    0    0    0  271 4395    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00 0.00 0.22 0.22 0.00 0.00 0.00 0.45 0.45 0.00
Crit Moves:                       ****                            ****
Green/Cycle: 0.00 0.00 0.00 0.00 0.26 0.26 0.00 0.00 0.00 0.54 0.54 0.00
Volume/Cap:  0.00 0.00 0.00 0.00 0.83 0.83 0.00 0.00 0.00 0.83 0.83 0.00
Delay/Veh:    0.0  0.0  0.0  0.0 22.7 22.7  0.0  0.0  0.0 12.2 12.2  0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:   0.0  0.0  0.0  0.0 22.7 22.7  0.0  0.0  0.0 12.2 12.2  0.0
HCM2kAvg:      0    0    0    0    8    8    0    0    0   12   12    0
********************************************************************************
```



```
--------------------------------------------------------------------------------
                        Raley's Landing Project
                    Existing Condition PM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #21 3rd St/ Q St
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.232
Loss Time (sec):    10 (Y+R =  4 sec) Average Delay (sec/veh):      16.6
Optimal Cycle:      25              Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  0  0  0   0  1  2  0  0   0  0  3  1  0   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    0  153  300    0    0  627   63    0    0    0
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:   0    0    0  153  300    0    0  627   63    0    0    0
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    0    0    0  153  300    0    0  627   63    0    0    0
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   0    0    0  153  300    0    0  627   63    0    0    0
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:    0    0    0  153  300    0    0  627   63    0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  1.00 1.00 1.00 0.82 0.82 1.00 1.00 0.81 0.81 1.00 1.00 1.00
Lanes:       0.00 0.00 0.00 1.00 2.00 0.00 0.00 3.63 0.37 0.00 0.00 0.00
Final Sat.:    0    0    0 1556 3112    0    0 5577  560    0    0    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00 0.10 0.10 0.00 0.00 0.11 0.11 0.00 0.00 0.00
Crit Moves:                       ****                 ****
Green/Cycle: 0.00 0.00 0.00 0.42 0.42 0.00 0.00 0.48 0.48 0.00 0.00 0.00
Volume/Cap:  0.00 0.00 0.00 0.24 0.23 0.00 0.00 0.23 0.23 0.00 0.00 0.00
Delay/Veh:    0.0  0.0  0.0 19.0 19.0  0.0  0.0 15.0 15.0  0.0  0.0  0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:   0.0  0.0  0.0 19.0 19.0  0.0  0.0 15.0 15.0  0.0  0.0  0.0
HCM2kAvg:      0    0    0    3    3    0    0    3    3    0    0    0
********************************************************************************
```

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------------------------------------------------------------------------------
                          Raley's Landing Project
                     Existing Condition PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #22 Jibboom St/ I St
******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.611
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):       24.5
Optimal Cycle:       48               Level Of Service:                  C
******************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       0  0  0  0  0   0  0  1! 0  0   1  0  1  0  0   0  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0   17    0   376  499  161     0    0  162    16
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0   17    0   376  499  161     0    0  162    16
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0   17    0   376  499  161     0    0  162    16
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0   17    0   376  499  161     0    0  162    16
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0   17    0   376  499  161     0    0  162    16
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.86 1.00  0.83 0.95 1.00  1.00 1.00 1.00  0.85
Lanes:       0.00 0.00  0.00 0.04 0.00  0.96 1.00 1.00  0.00 0.00 1.00  1.00
Final Sat.:    0    0     0   68    0  1509 1805 1900     0    0 1900  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.25 0.00  0.25 0.28 0.08  0.00 0.00 0.09  0.01
Crit Moves:                  ****              ****                 ****
Green/Cycle: 0.00 0.00  0.00 0.41 0.00  0.41 0.45 0.59  0.00 0.00 0.14  0.14
Volume/Cap:  0.00 0.00  0.00 0.61 0.00  0.61 0.61 0.14  0.00 0.00 0.61  0.07
Delay/Veh:    0.0  0.0   0.0 25.1  0.0  25.1 22.1  9.1   0.0  0.0 44.6  37.5
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 25.1  0.0  25.1 22.1  9.1   0.0  0.0 44.6  37.5
HCM2kAvg:      0    0     0   11    0    10   13    2     0    0    6     0
******************************************************************************
```



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------------------------------------------------------------------------------
                          Raley's Landing Project
                     Existing Condition PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #23 3rd St/ L St
******************************************************************************
Cycle (sec):         70               Critical Vol./Cap. (X):        0.835
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):       17.0
Optimal Cycle:       70               Level Of Service:                  B
******************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include           Ignore
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       0  0  0  0  0   0  0  2  1  0   0  0  0  0  0   1  1  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  397   316    0    0     0  363 1372   158
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0    0  397   316    0    0     0  363 1372   158
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
PHF Volume:    0    0     0    0  397   316    0    0     0  363 1372     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  397   316    0    0     0  363 1372     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
Final Vol.:    0    0     0    0  397   316    0    0     0  363 1372     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.76  0.76 1.00 1.00  1.00 0.73 0.73  1.00
Lanes:       0.00 0.00  0.00 0.00 2.00  1.00 0.00 0.00  0.00 1.00 2.00  1.00
Final Sat.:    0    0     0    0 2907  1445    0    0     0 1381 2762  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.14  0.22 0.00 0.00  0.00 0.26 0.50  0.00
Crit Moves:                             ****                        ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.26  0.26 0.00 0.00  0.00 0.60 0.60  0.00
Volume/Cap:  0.00 0.00  0.00 0.00 0.52  0.83 0.00 0.00  0.00 0.44 0.83  0.00
Delay/Veh:    0.0  0.0   0.0  0.0 22.4  31.5  0.0  0.0   0.0  7.9 14.5   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0 22.4  31.5  0.0  0.0   0.0  7.9 14.5   0.0
HCM2kAvg:      0    0     0    0    4     9    0    0     0    5   17     0
******************************************************************************
```

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                      Existing Condition PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #27 3rd St/ E St
*******************************************************************************
Average Delay (sec/veh):      1.0   Worst Case Level Of Service:       B[ 10.6]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      19  196     1     2  119     7     8    1     4     0    2     6
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   19  196     1     2  119     7     8    1     4     0    2     6
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    19  196     1     2  119     7     8    1     4     0    2     6
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    19  196     1     2  119     7     8    1     4     0    2     6
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2 xxxxx  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3 xxxxx  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  126 xxxx xxxxx   197 xxxx xxxxx   365  362   123  xxxx  365   197
Potent Cap.: 1473 xxxx xxxxx  1388 xxxx xxxxx   595  569   934  xxxx  567   850
Move Cap.:   1473 xxxx xxxxx  1388 xxxx xxxxx   583  561   934  xxxx  559   850
Volume/Cap:  0.01 xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.00  0.00  xxxx 0.00  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.5 xxxx xxxxx   7.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  657 xxxxx  xxxx xxxx   752
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx xxxx   0.0
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.6 xxxxx xxxxx xxxx   9.8
Shared LOS:     *    *     *     *    *     *     *    B     *     *    *     A
ApproachDel:     xxxxxx           xxxxxx             10.6              9.8
ApproachLOS:        *                *                 B                A
```

Intersection Capacity Analysis

Existing Plus Project

AM Peak Hour Scenario

Raley's Landing Project
Existing Plus Project Condition AM Peak Hour

Scenario Report

Scenario:	Existing Plus Project Am
Command:	Existing Plus Project Am
Volume:	Existing Plus Project Am
Geometry:	Existing AM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Existing Plus Project Condition AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 1 3rd St/ C St	A	xxxxx	0.590	A	xxxxx	0.590	+ 0.000 V/C
# 2 3rd St/ F St	A	xxxxx	0.445	A	xxxxx	0.445	+ 0.000 V/C
# 3 3rd St/ G St	D	32.2	0.000	D	32.2	0.000	+ 0.000 D/V
# 4 3rd St/ W capitol	A	xxxxx	0.519	A	xxxxx	0.519	+ 0.000 V/C
# 6 5th St/ C St	A	xxxxx	0.376	A	xxxxx	0.376	+ 0.000 V/C
# 7 5th St/ F St	B	11.9	0.000	B	11.9	0.000	+ 0.000 D/V
# 8 5th St/ G St	B	13.2	0.000	B	13.2	0.000	+ 0.000 D/V
# 9 5th St/ West Capitol Ave	B	10.9	0.336	B	10.9	0.336	+ 0.000 V/C
# 11 Jefferson/ West capitol Ave	A	xxxxx	0.542	A	xxxxx	0.542	+ 0.000 V/C
# 12 Jefferson/ Sacramento Ave	C	xxxxx	0.732	C	xxxxx	0.732	+ 0.000 V/C
# 13 SR 275 Ramp West Capitol/ Risk	B	11.4	0.000	B	11.4	0.000	+ 0.000 D/V
# 14 South River Rd/ US 50 WB Rmp	A	xxxxx	0.409	A	xxxxx	0.409	+ 0.000 V/C
# 15 South River Rd/ US 50 On Ramp	C	17.1	0.000	C	17.1	0.000	+ 0.000 D/V
# 17 Front St/ Capital Mall	A	3.7	0.525	A	3.7	0.525	+ 0.000 D/V
# 18 3rd St/ Capital Mall	B	18.2	0.421	B	18.2	0.421	+ 0.000 D/V
# 19 3rd St/ J St	D	43.7	0.957	D	43.7	0.957	+ 0.000 D/V
# 20 3rd St/ P St	B	10.3	0.311	B	10.3	0.311	+ 0.000 D/V
# 21 3rd St/ Q St	B	13.3	0.591	B	13.3	0.591	+ 0.000 D/V
# 22 Jibboom St/ I St	C	28.1	0.722	C	28.1	0.722	+ 0.000 D/V
# 23 3rd St/ L St	B	12.3	0.371	B	12.3	0.371	+ 0.000 D/V
# 27 3rd St/ E St	C	21.1	0.000	C	21.1	0.000	+ 0.000 D/V

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--------------------------------------------------------------------------------
                        Raley's Landing Project
               Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #1 3rd St/ C St
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.590
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      45              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  0  1   0  0  1! 0  0   1  0  1  0  1   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      12   10   151     8   17     2     0  377    22   379  325     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   12   10   151     8   17     2     0  377    22   379  325     4
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    12   10   151     8   17     2     0  377    22   379  325     4
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   12   10   151     8   17     2     0  377    22   379  325     4
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    12   10   151     8   17     2     0  377    22   379  325     4
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.55 0.45  1.00  0.30 0.63  0.07  1.00 1.00  1.00  1.00 0.99  0.01
Final Sat.:   845  705  1550   459  976   115  1550 1550  1550  1550 1531    19
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.01  0.10  0.02 0.02  0.02  0.00 0.24  0.01  0.24 0.21  0.21
Crit Vol:               151     8                    377         379
Crit Moves:            ****  ****                   ****        ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                        Raley's Landing Project
               Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #2 3rd St/ F St
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.445
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      41              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      27  306   213    36  256     6    47   34    32    46   31    17
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   27  306   213    36  256     6    47   34    32    46   31    17
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    27  306   213    36  256     6    47   34    32    46   31    17
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   27  306   213    36  256     6    47   34    32    46   31    17
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    27  306   213    36  256     6    47   34    32    46   31    17
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.59  0.41  1.00 0.98  0.02  1.00 0.52  0.48  1.00 0.65  0.35
Final Sat.:  1500  884   616  1500 1466    34  1500  773   727  1500  969   531
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.35  0.35  0.02 0.17  0.17  0.03 0.04  0.04  0.03 0.03  0.03
Crit Vol:          519          36                    66          46
Crit Moves:       ****        ****                  ****        ****
********************************************************************************
```

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--------------------------------------------------------------------------------
                           Raley's Landing Project
                 Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #3 3rd St/ G St
********************************************************************************
Average Delay (sec/veh):      2.2   Worst Case Level Of Service:       D[ 32.2]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  1  0  1    0  0  1! 0  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     191  541   168    47  283     5     7    2    23     3    0     1
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  191  541   168    47  283     5     7    2    23     3    0     1
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   191  541   168    47  283     5     7    2    23     3    0     1
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:   191  541   168    47  283     5     7    2    23     3    0     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1 xxxx   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  301 xxxx xxxxx   709 xxxx xxxxx  1407 1484   304  1320 xxxx   548
Potent Cap.: 1272 xxxx xxxxx   899 xxxx xxxxx   118  126   741   135 xxxx   540
Move Cap.:   1258 xxxx xxxxx   899 xxxx xxxxx    98  100   730   109 xxxx   537
Volume/Cap:  0.15 xxxx  xxxx  0.05 xxxx  xxxx  0.07 0.02  0.03  0.03 xxxx  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.5 xxxx xxxxx   0.2 xxxx xxxxx   0.2 xxxx xxxxx   0.1 xxxx xxxxx
Stopped Del:  8.4 xxxx xxxxx   9.2 xxxx xxxxx  44.5 xxxx xxxxx  39.0 xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     E    *     *     E    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   486  xxxx xxxx   537
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   0.2 xxxxx xxxx   0.0
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  12.8 xxxxx xxxx  11.7
Shared LOS:     *    *     *     *    *     *     *    *     B     *    *     B
ApproachDel:     xxxxxx           xxxxxx             19.8             32.2
ApproachLOS:        *                *                 C                D
```



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--------------------------------------------------------------------------------
                           Raley's Landing Project
                 Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #4 3rd St/ W capitol
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.519
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       47              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Ignore
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  0  0  0    0  0  1  0  1    1  0  0  0  1    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      72  355     0     0  124   126   164    0   161    34   62   395
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   72  355     0     0  124   126   164    0   161    34   62   395
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Volume:    72  355     0     0  124   126   164    0   161    34   62     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   72  355     0     0  124   126   164    0   161    34   62     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:    72  355     0     0  124   126   164    0   161    34   62     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.17 0.83  0.00  0.00 1.00  1.00  1.00 0.00  1.00  1.00 1.00  1.00
Final Sat.:   253 1247     0     0 1500  1500  1500    0  1500  1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.28 0.28  0.00  0.00 0.08  0.08  0.11 0.00  0.11  0.02 0.04  0.00
Crit Vol:          427                    126   164                     62
Crit Moves:       ****                   ****  ****                   ****
********************************************************************************
```

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------------------------------------------------------------------------------
                        Raley's Landing Project
              Existing Plus Project Condition AM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
******************************************************************************
Intersection #6 5th St/ C St
******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.376
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       37              Level Of Service:                  A
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     146    55    81    83    97    18     9   228   249   112   161    62
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  146    55    81    83    97    18     9   228   249   112   161    62
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   146    55    81    83    97    18     9   228   249   112   161    62
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  146    55    81    83    97    18     9   228   249   112   161    62
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   146    55    81    83    97    18     9   228   249   112   161    62
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500  1500  1500  1500  1500  1500  1500  1500  1500  1500  1500  1500
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  1.00  1.00  1.00  1.69  0.31  1.00  1.00  1.00  1.00  2.00  1.00
Final Sat.:  1500  1500  1500  1500  2530   470  1500  1500  1500  1500  3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10  0.04  0.05  0.06  0.04  0.04  0.01  0.15  0.17  0.07  0.05  0.04
Crit Vol:     146                      58                     249   112
Crit Moves:  ****                    ****                    ****  ****
******************************************************************************
```



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------------------------------------------------------------------------------
                        Raley's Landing Project
              Existing Plus Project Condition AM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
             2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #7 5th St/ F St
******************************************************************************
Average Delay (sec/veh):      3.6   Worst Case Level Of Service:      B[ 11.9]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0   0  1  0  1  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      30   145    20    36   199    20    14    25    37    18    14    31
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   30   145    20    36   199    20    14    25    37    18    14    31
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    30   145    20    36   199    20    14    25    37    18    14    31
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Final Vol.:    30   145    20    36   199    20    14    25    37    18    14    31
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1  xxxx xxxxx   4.1  xxxx xxxxx   7.5   6.5   6.9   7.5   6.5   6.9
FollowUpTim:  2.2  xxxx xxxxx   2.2  xxxx xxxxx   3.5   4.0   3.3   3.5   4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  224  xxxx xxxxx   169  xxxx xxxxx   433   515   119   407   515    94
Potent Cap.: 1357  xxxx xxxxx  1421  xxxx xxxxx   512   466   917   533   466   952
Move Cap.:   1351  xxxx xxxxx  1416  xxxx xxxxx   460   440   910   468   440   943
Volume/Cap:  0.02  xxxx  xxxx  0.03  xxxx  xxxx  0.03  0.06  0.04  0.04  0.03  0.03
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1  xxxx xxxxx   0.1  xxxx xxxxx xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx
Stopped Del:  7.7  xxxx xxxxx   7.6  xxxx xxxxx xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx
LOS by Move:    A     *     *     A     *     *     *     *     *     *     *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  xxxx xxxxx  xxxx  xxxx xxxxx  xxxx   595 xxxxx  xxxx   611 xxxxx
SharedQueue:  0.1  xxxx xxxxx   0.1  xxxx xxxxx xxxxx   0.4 xxxxx xxxxx   0.3 xxxxx
Shrd StpDel:  7.7  xxxx xxxxx   7.6  xxxx xxxxx xxxxx  11.9 xxxxx xxxxx  11.6 xxxxx
Shared LOS:     A     *     *     A     *     *     *     B     *     *     B     *
ApproachDel:     xxxxxx           xxxxxx             11.9             11.6
ApproachLOS:        *                *                 B                B
```

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-------------------------------------------------------------------------------
                          Raley's Landing Project
               Existing Plus Project Condition AM Peak Hour
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #8 5th St/ G St
*******************************************************************************
Average Delay (sec/veh):      4.6   Worst Case Level Of Service:      B[ 13.2]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  1  0  1  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       2  144    14    31  239     0     1    2     4   145    1    49
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    2  144    14    31  239     0     1    2     4   145    1    49
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     2  144    14    31  239     0     1    2     4   145    1    49
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     2  144    14    31  239     0     1    2     4   145    1    49
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   7.5  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  243 xxxx xxxxx   161 xxxx xxxxx   392  470   127   344  463    92
Potent Cap.: 1335 xxxx xxxxx  1430 xxxx xxxxx   547  495   907   591  499   954
Move Cap.:   1331 xxxx xxxxx  1427 xxxx xxxxx   503  480   901   574  484   943
Volume/Cap:  0.00 xxxx  xxxx  0.02 xxxx  xxxx  0.00 0.00  0.00  0.25 0.00  0.05
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.7 xxxx xxxxx   7.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  661 xxxxx  xxxx  636 xxxxx
SharedQueue:  0.0 xxxx xxxxx   0.1 xxxx xxxxx xxxxx  0.0 xxxxx xxxxx  1.3 xxxxx
Shrd StpDel:  7.7 xxxx xxxxx   7.6 xxxx xxxxx xxxxx 10.5 xxxxx xxxxx 13.2 xxxxx
Shared LOS:     A    *     *     A    *     *     *    B     *     *    B     *
ApproachDel:     xxxxxx           xxxxxx             10.5             13.2
ApproachLOS:        *                *                 B                B
```



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-------------------------------------------------------------------------------
                          Raley's Landing Project
               Existing Plus Project Condition AM Peak Hour
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
*******************************************************************************
Intersection #9 5th St/ West Capitol Ave
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap. (X):        0.336
Loss Time (sec):       0 (Y+R =  4 sec) Average Delay (sec/veh):       10.9
Optimal Cycle:         0               Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  0  0  0    0  1  0  0  1    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0   124   60   171   145  203     1    47  117    75
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0   124   60   171   145  203     1    47  117    75
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0   124   60   171   145  203     1    47  117    75
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0   124   60   171   145  203     1    47  117    75
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0    0     0   124   60   171   145  203     1    47  117    75
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 0.00  0.00  0.67 0.33  1.00  1.00 0.99  0.01  1.00 0.61  0.39
Final Sat.:     0    0     0   371  180   653   559  605     3   542  376   241
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     xxxx xxxx  xxxx  0.33 0.33  0.26  0.26 0.34  0.34  0.09 0.31  0.31
Crit Moves:                        ****              ****                   ****
Delay/Veh:    0.0  0.0   0.0  11.9 11.9   9.7  11.0 11.2  11.2   9.7 10.7  10.7
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  11.9 11.9   9.7  11.0 11.2  11.2   9.7 10.7  10.7
LOS by Move:    *    *     *     B    B     A     B    B     B     A    B     B
ApproachDel:     xxxxxx             10.9             11.1             10.5
Delay Adj:        xxxxx             1.00             1.00             1.00
ApprAdjDel:      xxxxxx             10.9             11.1             10.5
LOS by Appr:        *                 B                B                B
*******************************************************************************
```

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--------------------------------------------------------------------------------
                          Raley's Landing Project
                Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #11 Jefferson/ West capitol Ave
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):       0.542
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      50              Level Of Service:                 A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     107  633    80    50  800   107   197  203   135    63  133    35
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  107  633    80    50  800   107   197  203   135    63  133    35
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   107  633    80    50  800   107   197  203   135    63  133    35
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  107  633    80    50  800   107   197  203   135    63  133    35
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   107  633    80    50  800   107   197  203   135    63  133    35
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.78  0.22  1.00 1.76  0.24  1.00 2.00  1.00  1.00 2.38  0.62
Final Sat.:  1500 2663   337  1500 2646   354  1500 3000  1500  1500 3563   938
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.24  0.24  0.03 0.30  0.30  0.13 0.07  0.09  0.04 0.04  0.04
Crit Vol:     107                         454   197                     56
Crit Moves:  ****                        ****  ****                   ****
********************************************************************************
```



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--------------------------------------------------------------------------------
                          Raley's Landing Project
                Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #12 Jefferson/ Sacramento Ave
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):       0.732
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      85              Level Of Service:                 C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Ignore           Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  0  1  0   1  0  1  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     186  288   139    34  367    75    58  355   360   115  254    12
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  186  288   139    34  367    75    58  355   360   115  254    12
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Volume:   186  288   139    34  367    75    58  355     0   115  254    12
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  186  288   139    34  367    75    58  355     0   115  254    12
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
Final Vol.:   186  288   139    34  367    75    58  355     0   115  254    12
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 0.83  0.17  1.00 1.00  1.00  1.00 1.91  0.09
Final Sat.:  1500 1500  1500  1500 1245   255  1500 1500  1500  1500 2865   135
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.19  0.09  0.02 0.29  0.29  0.04 0.24  0.00  0.08 0.09  0.09
Crit Vol:     186                    442              355         115
Crit Moves:  ****                   ****             ****        ****
********************************************************************************
```

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--------------------------------------------------------------------------------
                           Raley's Landing Project
                 Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #13 SR 275 Ramp West Capitol/ Riske Ln
********************************************************************************
Average Delay (sec/veh):      2.7   Worst Case Level Of Service:       B[ 11.4]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      87    0    43     0    0     0     7  155   137    12  168     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   87    0    43     0    0     0     7  155   137    12  168     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    87    0    43     0    0     0     7  155   137    12  168     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    87    0    43     0    0     0     7  155   137    12  168     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8 xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  346 xxxx   146  xxxx xxxx xxxxx   168 xxxx xxxxx   292 xxxx xxxxx
Potent Cap.:  631 xxxx   881  xxxx xxxx xxxxx  1422 xxxx xxxxx  1281 xxxx xxxxx
Move Cap.:    624 xxxx   881  xxxx xxxx xxxxx  1422 xxxx xxxxx  1281 xxxx xxxxx
Volume/Cap:  0.14 xxxx  0.05  xxxx xxxx  xxxx  0.00 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx   7.8 xxxx xxxxx
LOS by Move:   *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx  690 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx 11.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      11.4            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
```



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--------------------------------------------------------------------------------
                           Raley's Landing Project
                 Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #14 South River Rd/ US 50 WB Rmp
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.409
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       39               Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  1  0  1   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   64   135     2   70     1   230  197   176   104    0     9
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   64   135     2   70     1   230  197   176   104    0     9
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0   64   135     2   70     1   230  197   176   104    0     9
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0   64   135     2   70     1   230  197   176   104    0     9
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0   64   135     2   70     1   230  197   176   104    0     9
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 1.00  1.00  1.00 0.99  0.01  1.00 0.53  0.47  1.00 0.00  1.00
Final Sat.:     0 1500  1500  1500 1479    21  1500  792   708  1500    0  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.04  0.09  0.00 0.05  0.05  0.15 0.25  0.25  0.07 0.00  0.01
Crit Vol:               135     2                   373         104
Crit Moves:            ****  ****                  ****        ****
********************************************************************************
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--------------------------------------------------------------------------------
                          Raley's Landing Project
                Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #15 South River Rd/ US 50 On Ramp
********************************************************************************
Average Delay (sec/veh):      2.7   Worst Case Level Of Service:      C[ 17.1]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Yield Sign       Yield Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  1  0  0  1    0  0  0  0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      206  152     4     3  245    95     0    0     0     3    5     3
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   206  152     4     3  245    95     0    0     0     3    5     3
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    206  152     4     3  245    95     0    0     0     3    5     3
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    206  152     4     3  245    95     0    0     0     3    5     3
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   4.1 xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:   2.2 xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   340 xxxx xxxxx   156 xxxx xxxxx  xxxx xxxx xxxxx   868  912   154
Potent Cap.:  1230 xxxx xxxxx  1436 xxxx xxxxx  xxxx xxxx xxxxx   326  276   897
Move Cap.:    1230 xxxx xxxxx  1436 xxxx xxxxx  xxxx xxxx xxxxx   283  229   897
Volume/Cap:   0.17 xxxx  xxxx  0.00 xxxx  xxxx  xxxx xxxx  xxxx  0.01 0.02  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:         0.6 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:   8.5 xxxx xxxxx   7.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  308 xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx   7.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 17.1 xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    C     *
ApproachDel:      xxxxxx           xxxxxx           xxxxxx            17.1
ApproachLOS:         *                *                *                C
```



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--------------------------------------------------------------------------------
                          Raley's Landing Project
                Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #17 Front St/ Capital Mall
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.525
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):        3.7
Optimal Cycle:       39               Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include           Ignore
Min. Green:     0     0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  1  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        0    0    20     0    0    83     0 1655     5    27  726    71
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     0    0    20     0    0    83     0 1655     5    27  726    71
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Volume:      0    0    20     0    0    83     0 1655     5    27  726     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     0    0    20     0    0    83     0 1655     5    27  726     0
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:      0    0    20     0    0    83     0 1655     5    27  726     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   1.00 1.00  0.87  1.00 1.00  0.87  1.00 0.95  0.95  0.95 0.95  1.00
Lanes:        0.00 0.00  1.00  0.00 0.00  1.00  0.00 1.99  0.01  1.00 2.00  1.00
Final Sat.:      0    0  1644     0    0  1644     0 3599    11  1805 3610  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.00  0.01  0.00 0.00  0.05  0.00 0.46  0.46  0.01 0.20  0.00
Crit Moves:                               ****       ****        ****
Green/Cycle:  0.00 0.00  0.10  0.00 0.00  0.10  0.00 0.88  0.88  0.03 0.90  0.00
Volume/Cap:   0.00 0.00  0.13  0.00 0.00  0.53  0.00 0.53  0.53  0.53 0.22  0.00
Delay/Veh:     0.0  0.0  41.7   0.0  0.0  46.3   0.0  1.6   1.6  57.6  0.6   0.0
User DelAdj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:    0.0  0.0  41.7   0.0  0.0  46.3   0.0  1.6   1.6  57.6  0.6   0.0
HCM2kAvg:        0    0     1     0    0     3     0    6     6     2    1     0
********************************************************************************
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--------------------------------------------------------------------------------
                          Raley's Landing Project
                 Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #18 3rd St/ Capital Mall
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.421
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):       18.2
Optimal Cycle:       32               Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  1  2  0  1   0  0  2  1  0   1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  215  522    49    0  836    77   61  235     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0    0     0  215  522    49    0  836    77   61  235     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0    0     0  215  522    49    0  836    77   61  235     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  215  522    49    0  836    77   61  235     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0    0     0  215  522    49    0  836    77   61  235     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  0.70 0.70  0.77  1.00 0.81  0.81  0.86 0.86  1.00
Lanes:       0.00 0.00  0.00  0.88 2.12  1.00  0.00 2.75  0.25  1.00 2.00  0.00
Final Sat.:    0    0     0  1158 2810  1454    0 4219   389  1625 3249     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.19 0.19  0.03  0.00 0.20  0.20  0.04 0.07  0.00
Crit Moves:                        ****              ****        ****
Green/Cycle: 0.00 0.00  0.00  0.44 0.44  0.44  0.00 0.47  0.47  0.09 0.56  0.00
Volume/Cap:  0.00 0.00  0.00  0.42 0.42  0.08  0.00 0.42  0.42  0.42 0.13  0.00
Delay/Veh:    0.0  0.0   0.0  19.4 19.4  16.2   0.0 17.6  17.6  45.1 10.5   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  19.4 19.4  16.2   0.0 17.6  17.6  45.1 10.5   0.0
HCM2kAvg:      0    0     0     6    6     1     0    6     6     2    2     0
********************************************************************************
```



```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                 Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #19 3rd St/ J St
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.957
Loss Time (sec):     15 (Y+R =  4 sec) Average Delay (sec/veh):       43.7
Optimal Cycle:      145               Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0   24     0    0   15     0
Lanes:        0  0  0  0  2   1  0  2  0  0   0  1  2  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    54  104  102     0   19 1511   444   10 1549   290
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0    0    54  104  102     0   19 1511   444   10 1549   290
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0    0    54  104  102     0   19 1511   444   10 1549   290
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0    54  104  102     0   19 1511   444   10 1549   290
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0    0    54  104  102     0   19 1511   444   10 1549   290
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  0.67  0.69 0.86  1.00  0.79 0.79  0.79  0.80 0.80  0.80
Lanes:       0.00 0.00  2.00  1.00 2.00  0.00  0.04 3.06  0.90  0.02 2.51  0.47
Final Sat.:    0    0  2558  1315 3249     0    58 4602  1352    25 3817   715
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.02  0.08 0.03  0.00  0.33 0.33  0.33  0.41 0.41  0.41
Crit Moves:                  ****                          ****              ****
Green/Cycle: 0.00 0.00  0.08  0.08 0.08  0.00  0.34 0.34  0.34  0.42 0.42  0.42
Volume/Cap:  0.00 0.00  0.26  0.96 0.38  0.00  0.96 0.96  0.96  0.96 0.96  0.96
Delay/Veh:    0.0  0.0  43.6 118.0 44.3   0.0  43.5 43.5  43.5  39.8 39.8  39.8
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  43.6 118.0 44.3   0.0  43.5 43.5  43.5  39.8 39.8  39.8
HCM2kAvg:      0    0     1     7    2     0    20   20    20    24   24    24
********************************************************************************
```

```
--------------------------------------------------------------------------------
                         Raley's Landing Project
              Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #20 3rd St/ P St
********************************************************************************
Cycle (sec):         50                Critical Vol./Cap. (X):        0.311
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):        10.3
Optimal Cycle:       27                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  0  0  0   0  0  1  1  1   0  0  0  0  0   0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    0    0  311  209    0    0    0  148  485    0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0    0    0    0  311  209    0    0    0  148  485    0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0    0    0    0  311  209    0    0    0  148  485    0
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   0    0    0    0  311  209    0    0    0  148  485    0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0    0    0    0  311  209    0    0    0  148  485    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  1.00 0.80  0.80  1.00 1.00  1.00  0.82 0.82  1.00
Lanes:       0.00 0.00  0.00  0.00 1.79  1.21  0.00 0.00  0.00  0.70 2.30  0.00
Final Sat.:    0    0    0    0 2740 1841    0    0    0 1091 3577    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.00 0.11  0.11  0.00 0.00  0.00  0.14 0.14  0.00
Crit Moves:                        ****                              ****
Green/Cycle: 0.00 0.00  0.00  0.00 0.36  0.36  0.00 0.00  0.00  0.44 0.44  0.00
Volume/Cap:  0.00 0.00  0.00  0.00 0.31  0.31  0.00 0.00  0.00  0.31 0.31  0.00
Delay/Veh:    0.0  0.0   0.0   0.0 11.5  11.5   0.0  0.0   0.0   9.3  9.3   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0   0.0 11.5  11.5   0.0  0.0   0.0   9.3  9.3   0.0
HCM2kAvg:      0    0    0    0    2    2    0    0    0    2    2    0
********************************************************************************
```



```
--------------------------------------------------------------------------------
                         Raley's Landing Project
              Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #21 3rd St/ Q St
********************************************************************************
Cycle (sec):        100                Critical Vol./Cap. (X):        0.591
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):        13.3
Optimal Cycle:       43                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  0  0  0   0  1  2  0  0   0  0  3  1  0   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    0  219  226    0    0 2134  260    0    0    0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0    0    0  219  226    0    0 2134  260    0    0    0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0    0    0  219  226    0    0 2134  260    0    0    0
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   0    0    0  219  226    0    0 2134  260    0    0    0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0    0    0  219  226    0    0 2134  260    0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  0.82 0.82  1.00  1.00 0.81  0.81  1.00 1.00  1.00
Lanes:       0.00 0.00  0.00  1.00 2.00  0.00  0.00 3.57  0.43  0.00 0.00  0.00
Final Sat.:    0    0    0 1556 3112    0    0 5460  665    0    0    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.14 0.07  0.00  0.00 0.39  0.39  0.00 0.00  0.00
Crit Moves:                   ****                   ****
Green/Cycle: 0.00 0.00  0.00  0.24 0.24  0.00  0.00 0.66  0.66  0.00 0.00  0.00
Volume/Cap:  0.00 0.00  0.00  0.59 0.30  0.00  0.00 0.59  0.59  0.00 0.00  0.00
Delay/Veh:    0.0  0.0   0.0  35.0 31.4   0.0   0.0  9.6   9.6   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  35.0 31.4   0.0   0.0  9.6   9.6   0.0  0.0   0.0
HCM2kAvg:      0    0    0    7    3    0    0   11   11    0    0    0
********************************************************************************
```

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                 Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #22 Jibboom St/ I St
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.722
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):       28.1
Optimal Cycle:       67               Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  1! 0  0   1  0  1  0  0   0  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  107    0   534  397  164     0    0  192     7
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  107    0   534  397  164     0    0  192     7
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  107    0   534  397  164     0    0  192     7
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  107    0   534  397  164     0    0  192     7
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0  107    0   534  397  164     0    0  192     7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.84 1.00  0.84 0.95 1.00  1.00 1.00 1.00  0.85
Lanes:       0.00 0.00  0.00 0.17 0.00  0.83 1.00 1.00  0.00 0.00 1.00  1.00
Final Sat.:    0    0     0  267    0  1332 1805 1900     0    0 1900  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.40 0.00  0.40 0.22 0.09  0.00 0.00 0.10  0.00
Crit Moves:                  ****              ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.56 0.00  0.56 0.30 0.44  0.00 0.00 0.14  0.14
Volume/Cap:  0.00 0.00  0.00 0.72 0.00  0.72 0.72 0.19  0.00 0.00 0.72  0.03
Delay/Veh:    0.0  0.0   0.0 19.4  0.0  19.4 35.7 17.0   0.0  0.0 50.5  37.2
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 19.4  0.0  19.4 35.7 17.0   0.0  0.0 50.5  37.2
HCM2kAvg:      0    0     0   16    0    16   13    3     0    0    7     0
********************************************************************************
```



```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                 Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #23 3rd St/ L St
********************************************************************************
Cycle (sec):         70               Critical Vol./Cap. (X):        0.371
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):       12.3
Optimal Cycle:       29               Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Ignore
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  2  1  0   0  0  0  0  0   1  1  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  649   243    0    0     0  102  327    58
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0    0  649   243    0    0     0  102  327    58
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
PHF Volume:    0    0     0    0  649   243    0    0     0  102  327     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  649   243    0    0     0  102  327     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
Final Vol.:    0    0     0    0  649   243    0    0     0  102  327     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.79  0.79 1.00 1.00  1.00 0.73 0.73  1.00
Lanes:       0.00 0.00  0.00 0.00 2.18  0.82 0.00 0.00  0.00 1.00 2.00  1.00
Final Sat.:    0    0     0    0 3257  1220    0    0     0 1381 2762  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.20  0.20 0.00 0.00  0.00 0.07 0.12  0.00
Crit Moves:                       ****                            ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.54  0.54 0.00 0.00  0.00 0.32 0.32  0.00
Volume/Cap:  0.00 0.00  0.00 0.00 0.37  0.37 0.00 0.00  0.00 0.23 0.37  0.00
Delay/Veh:    0.0  0.0   0.0  0.0  9.4   9.4  0.0  0.0   0.0 17.6 18.6   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0  9.4   9.4  0.0  0.0   0.0 17.6 18.6   0.0
HCM2kAvg:      0    0     0    0    4     4    0    0     0    2    3     0
********************************************************************************
```

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--------------------------------------------------------------------------------
                            Raley's Landing Project
                 Existing Plus Project Condition AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #27 3rd St/ E St
********************************************************************************
Average Delay (sec/veh):      5.4   Worst Case Level Of Service:       C[ 21.1]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      23  163   180   159  214     4     4   53    34    28   12    34
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   23  163   180   159  214     4     4   53    34    28   12    34
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    23  163   180   159  214     4     4   53    34    28   12    34
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    23  163   180   159  214     4     4   53    34    28   12    34
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  218 xxxx xxxxx   343 xxxx xxxxx   856  923   216   877  835   253
Potent Cap.: 1364 xxxx xxxxx  1227 xxxx xxxxx   280  272   829   271  306   791
Move Cap.:   1364 xxxx xxxxx  1227 xxxx xxxxx   228  229   829   189  258   791
Volume/Cap:  0.02 xxxx  xxxx  0.13 xxxx  xxxx  0.02 0.23  0.04  0.15 0.05  0.04
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.7 xxxx xxxxx   8.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:   A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  314 xxxxx  xxxx  311 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  1.2 xxxxx xxxxx  0.9 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 21.1 xxxxx xxxxx 20.1 xxxxx
Shared LOS:     *    *     *     *    *     *     *    C     *     *    C     *
ApproachDel:     xxxxxx           xxxxxx             21.1             20.1
ApproachLOS:        *                *                 C                C
```

Intersection Capacity Analysis

Existing Plus Project

PM Peak Hour Scenario

Raley's Landing Project
Existing Plus Project Condition PM Peak Hour

Scenario Report

Scenario:	Existing Plus Project PM
Command:	Existing Plus Project Pm
Volume:	Existing Plus Project PM
Geometry:	Existing PM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Existing Plus Project Condition PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 3rd St/ C St	B	xxxxx	0.639	B	xxxxx	0.639	+ 0.000 V/C
# 2 3rd St/ F St	A	xxxxx	0.415	A	xxxxx	0.415	+ 0.000 V/C
# 3 3rd St/ G St	F	427.2	0.000	F	427.2	0.000	+ 0.000 D/V
# 4 3rd St/ W capitol	A	xxxxx	0.581	A	xxxxx	0.581	+ 0.000 V/C
# 6 5th St/ C St	A	xxxxx	0.386	A	xxxxx	0.386	+ 0.000 V/C
# 7 5th St/ F St	B	13.8	0.000	B	13.8	0.000	+ 0.000 D/V
# 8 5th St/ G St	C	23.4	0.000	C	23.4	0.000	+ 0.000 D/V
# 9 5th St/ West Capitol Ave	C	16.9	0.696	C	16.9	0.696	+ 0.000 V/C
# 11 Jefferson/ West capitol Ave	C	xxxxx	0.709	C	xxxxx	0.709	+ 0.000 V/C
# 12 Jefferson/ Sacramento Ave	D	xxxxx	0.813	D	xxxxx	0.813	+ 0.000 V/C
# 13 SR 275 Ramp West Capitol/ Risk	C	21.8	0.000	C	21.8	0.000	+ 0.000 D/V
# 14 South River Rd/ US 50 WB Rmp	A	xxxxx	0.399	A	xxxxx	0.399	+ 0.000 V/C
# 15 South River Rd/ US 50 On Ramp	B	10.5	0.000	B	10.5	0.000	+ 0.000 D/V
# 17 Front St/ Capital Mall	A	5.2	0.416	A	5.2	0.416	+ 0.000 D/V
# 18 3rd St/ Capital Mall	C	21.5	0.510	C	21.5	0.510	+ 0.000 D/V
# 19 3rd St/ J St	C	28.7	0.540	C	28.7	0.540	+ 0.000 D/V
# 20 3rd St/ P St	B	18.7	0.879	B	18.7	0.879	+ 0.000 D/V
# 21 3rd St/ Q St	B	17.2	0.258	B	17.2	0.258	+ 0.000 D/V
# 22 Jibboom St/ I St	C	30.9	0.790	C	30.9	0.790	+ 0.000 D/V
# 23 3rd St/ L St	C	20.0	0.893	C	20.0	0.893	+ 0.000 D/V
# 27 3rd St/ E St	D	33.9	0.000	D	33.9	0.000	+ 0.000 D/V

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                 Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 3rd St/ C St
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.639
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       52              Level Of Service:                 B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  0  1   0  0  1! 0  0   1  0  1  0  1   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      37   21   366     5    9     3     3  411    22   209  445    13
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   37   21   366     5    9     3     3  411    22   209  445    13
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    37   21   366     5    9     3     3  411    22   209  445    13
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   37   21   366     5    9     3     3  411    22   209  445    13
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    37   21   366     5    9     3     3  411    22   209  445    13
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.64 0.36  1.00  0.29 0.53  0.18  1.00 1.00  1.00  1.00 0.97  0.03
Final Sat.:   989  561  1550   456  821   274  1550 1550  1550  1550 1506    44
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.04  0.24  0.01 0.01  0.01  0.00 0.27  0.01  0.13 0.30  0.30
Crit Vol:                366     5                   411         209
Crit Moves:             ****  ****                  ****        ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                 Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #2 3rd St/ F St
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.415
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       39              Level Of Service:                 A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      30  300    98    12  299    15    32   29    21   162   48    56
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   30  300    98    12  299    15    32   29    21   162   48    56
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    30  300    98    12  299    15    32   29    21   162   48    56
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   30  300    98    12  299    15    32   29    21   162   48    56
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    30  300    98    12  299    15    32   29    21   162   48    56
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.75  0.25  1.00 0.95  0.05  1.00 0.58  0.42  1.00 0.46  0.54
Final Sat.:  1500 1131   369  1500 1428    72  1500  870   630  1500  692   808
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.27  0.27  0.01 0.21  0.21  0.02 0.03  0.03  0.11 0.07  0.07
Crit Vol:                398    12                    50         162
Crit Moves:             ****  ****                  ****        ****
*******************************************************************************
```

```
-------------------------------------------------------------------------------
                         Raley's Landing Project
              Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #3 3rd St/ G St
*******************************************************************************
Average Delay (sec/veh):     59.9   Worst Case Level Of Service:      F[427.2]
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  1  0  1   0  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     332  376     1     0  475     8     6    0    19   140    1    47
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  332  376     1     0  475     8     6    0    19   140    1    47
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   332  376     1     0  475     8     6    0    19   140    1    47
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:   332  376     1     0  475     8     6    0    19   140    1    47
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   7.1 xxxx   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  483 xxxx xxxxx  xxxx xxxx xxxxx  1544 xxxx   479  1529 1523   376
Potent Cap.: 1090 xxxx xxxxx  xxxx xxxx xxxxx    95 xxxx   591    97  119   675
Move Cap.:   1090 xxxx xxxxx  xxxx xxxx xxxxx    67 xxxx   591    72   83   675
Volume/Cap:  0.30 xxxx  xxxx  xxxx xxxx  xxxx  0.09 xxxx  0.03  1.95 0.01  0.07
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        1.3 xxxx xxxxx xxxxx xxxx xxxxx   0.3 xxxx xxxxx  12.7 xxxx xxxxx
Stopped Del:  9.7 xxxx xxxxx xxxxx xxxx xxxxx  64.2 xxxx xxxxx 569.7 xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     F    *     *     F    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   591  xxxx xxxx   588
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   0.1 xxxxx xxxx   0.3
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  11.3 xxxxx xxxx  11.7
Shared LOS:     *    *     *     *    *     *     *    *     B     *    *     B
ApproachDel:     xxxxxx           xxxxxx             24.0            427.2
ApproachLOS:        *                *                 C                F
```



```
-------------------------------------------------------------------------------
                         Raley's Landing Project
              Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #4 3rd St/ W capitol
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.581
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       54              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include           Ignore
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  0  0  0   0  0  1  0  1   1  0  0  0  1   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      40  180     0     0  324   247   185    0   204    72  143   270
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   40  180     0     0  324   247   185    0   204    72  143   270
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Volume:    40  180     0     0  324   247   185    0   204    72  143     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   40  180     0     0  324   247   185    0   204    72  143     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:    40  180     0     0  324   247   185    0   204    72  143     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.18 0.82  0.00  0.00 1.00  1.00  1.00 0.00  1.00  1.00 1.00  1.00
Final Sat.:   273 1227     0     0 1500  1500  1500    0  1500  1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.15 0.15  0.00  0.00 0.22  0.16  0.12 0.00  0.14  0.05 0.10  0.00
Crit Vol:          220              324         185                    143
Crit Moves:       ****             ****        ****                   ****
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                       Raley's Landing Project
                Existing Plus Project Condition PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #6 5th St/ C St
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.386
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       37              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     187  126   183    59   88    15    18  227   190   129  350    90
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  187  126   183    59   88    15    18  227   190   129  350    90
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   187  126   183    59   88    15    18  227   190   129  350    90
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  187  126   183    59   88    15    18  227   190   129  350    90
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   187  126   183    59   88    15    18  227   190   129  350    90
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 1.71  0.29  1.00 1.09  0.91  1.00 2.00  1.00
Final Sat.:  1500 1500  1500  1500 2563   437  1500 1633  1367  1500 3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.08  0.12  0.04 0.03  0.03  0.01 0.14  0.14  0.09 0.12  0.06
Crit Vol:                183    59                           209   129
Crit Moves:             ****  ****                          ****  ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                       Raley's Landing Project
                Existing Plus Project Condition PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
              2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #7 5th St/ F St
********************************************************************************
Average Delay (sec/veh):      3.9   Worst Case Level Of Service:      B[ 13.8]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0   0  1  0  1  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      33  271    21    23  191    11    35   17    48    39   18    27
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   33  271    21    23  191    11    35   17    48    39   18    27
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    33  271    21    23  191    11    35   17    48    39   18    27
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    33  271    21    23  191    11    35   17    48    39   18    27
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   7.5  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  202 xxxx xxxxx   292 xxxx xxxxx   453  601   101   497  596   146
Potent Cap.: 1382 xxxx xxxxx  1281 xxxx xxxxx   495  417   941   460  420   881
Move Cap.:   1382 xxxx xxxxx  1281 xxxx xxxxx   448  399   941   409  402   881
Volume/Cap:  0.02 xxxx  xxxx  0.02 xxxx  xxxx  0.08 0.04  0.05  0.10 0.04  0.03
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.7 xxxx xxxxx   7.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:   A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  583 xxxxx  xxxx  492 xxxxx
SharedQueue:  0.1 xxxx xxxxx   0.1 xxxx xxxxx xxxxx  0.6 xxxxx xxxxx  0.6 xxxxx
Shrd StpDel:  7.7 xxxx xxxxx   7.9 xxxx xxxxx xxxxx 12.5 xxxxx xxxxx 13.8 xxxxx
Shared LOS:    A    *     *     A    *     *     *    B     *     *    B     *
ApproachDel:     xxxxxx           xxxxxx             12.5             13.8
ApproachLOS:        *                *                 B                B
```

```
------------------------------------------------------------------------------
                         Raley's Landing Project
               Existing Plus Project Condition PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #8 5th St/ G St
******************************************************************************
Average Delay (sec/veh):      7.1   Worst Case Level Of Service:       C[ 23.4]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  1  0  1  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       4  297    20    51  227     3     2    1     6   198    3    34
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    4  297    20    51  227     3     2    1     6   198    3    34
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     4  297    20    51  227     3     2    1     6   198    3    34
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     4  297    20    51  227     3     2    1     6   198    3    34
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   7.5  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  241 xxxx xxxxx   328 xxxx xxxxx   511  678   137   553  669   181
Potent Cap.: 1337 xxxx xxxxx  1243 xxxx xxxxx   450  377   893   420  381   837
Move Cap.:   1325 xxxx xxxxx  1232 xxxx xxxxx   407  353   876   395  357   822
Volume/Cap:  0.00 xxxx  xxxx  0.04 xxxx  xxxx  0.00 0.00  0.01  0.50 0.01  0.04
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.7 xxxx xxxxx   8.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  617 xxxxx  xxxx  426 xxxxx
SharedQueue:  0.0 xxxx xxxxx   0.1 xxxx xxxxx xxxxx  0.0 xxxxx xxxxx  3.2 xxxxx
Shrd StpDel:  7.7 xxxx xxxxx   8.0 xxxx xxxxx xxxxx 10.9 xxxxx xxxxx 23.4 xxxxx
Shared LOS:     A    *     *     A    *     *     *    B     *     *    C     *
ApproachDel:     xxxxxx           xxxxxx             10.9             23.4
ApproachLOS:        *                *                 B                C
```



```
------------------------------------------------------------------------------
                         Raley's Landing Project
               Existing Plus Project Condition PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM 4-Way Stop Method (Base Volume Alternative)
******************************************************************************
Intersection #9 5th St/ West Capitol Ave
******************************************************************************
Cycle (sec):        100                Critical Vol./Cap. (X):        0.696
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):        16.9
Optimal Cycle:        0                Level Of Service:                  C
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  0  0  0    0  1  0  0  1    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0   130   83   290   225  260    10    93  298    78
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0   130   83   290   225  260    10    93  298    78
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0   130   83   290   225  260    10    93  298    78
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0   130   83   290   225  260    10    93  298    78
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0    0     0   130   83   290   225  260    10    93  298    78
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 0.00  0.00  0.61 0.39  1.00  1.00 0.96  0.04  1.00 0.79  0.21
Final Sat.:     0    0     0   298  190   565   493  512    20   485  428   112
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     xxxx xxxx  xxxx  0.44 0.44  0.51  0.46 0.51  0.51  0.19 0.70  0.70
Crit Moves:                               ****              ****              ****
Delay/Veh:    0.0  0.0   0.0  15.1 15.1  14.9  15.5 15.7  15.7  11.6 22.4  22.4
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  15.1 15.1  14.9  15.5 15.7  15.7  11.6 22.4  22.4
LOS by Move:    *    *     *     C    C     B     C    C     C     B    C     C
ApproachDel:     xxxxxx             15.0             15.6             20.2
Delay Adj:        xxxxx             1.00             1.00             1.00
ApprAdjDel:      xxxxxx             15.0             15.6             20.2
LOS by Appr:        *                 B                C                C
******************************************************************************
```

```
---------------------------------------------------------------------------------
                       Raley's Landing Project
              Existing Plus Project Condition PM Peak Hour
---------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
*********************************************************************************
Intersection #11 Jefferson/ West capitol Ave
*********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.709
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       78              Level Of Service:                  C
*********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     202  747   114    51  656   150   261  340   238   220  391   112
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  202  747   114    51  656   150   261  340   238   220  391   112
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   202  747   114    51  656   150   261  340   238   220  391   112
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  202  747   114    51  656   150   261  340   238   220  391   112
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   202  747   114    51  656   150   261  340   238   220  391   112
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.74  0.26  1.00 1.63  0.37  1.00 2.00  1.00  1.00 2.33  0.67
Final Sat.:  1500 2603   397  1500 2442   558  1500 3000  1500  1500 3498  1002
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.29  0.29  0.03 0.27  0.27  0.17 0.11  0.16  0.15 0.11  0.11
Crit Vol:     202                    403                    238   220
Crit Moves:  ****                   ****                   ****  ****
*********************************************************************************
```



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---------------------------------------------------------------------------------
                       Raley's Landing Project
              Existing Plus Project Condition PM Peak Hour
---------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
*********************************************************************************
Intersection #12 Jefferson/ Sacramento Ave
*********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.813
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      122              Level Of Service:                  D
*********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include           Ignore          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  0  1  0   1  0  1  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     401  389   205    19  226    74   130  319   314   200  306    31
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  401  389   205    19  226    74   130  319   314   200  306    31
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Volume:   401  389   205    19  226    74   130  319     0   200  306    31
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  401  389   205    19  226    74   130  319     0   200  306    31
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
Final Vol.:   401  389   205    19  226    74   130  319     0   200  306    31
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 0.75  0.25  1.00 1.00  1.00  1.00 1.82  0.18
Final Sat.:  1500 1500  1500  1500 1130   370  1500 1500  1500  1500 2724   276
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.27 0.26  0.14  0.01 0.20  0.20  0.09 0.21  0.00  0.13 0.11  0.11
Crit Vol:     401                    300              319         200
Crit Moves:  ****                   ****             ****        ****
*********************************************************************************
```

```
-------------------------------------------------------------------------------
                         Raley's Landing Project
               Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #13 SR 275 Ramp West Capitol/ Riske Ln
*******************************************************************************
Average Delay (sec/veh):      4.9   Worst Case Level Of Service:       C[ 21.8]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  0  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      187    0    35     0    0     6    13  269   173     9  345     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   187    0    35     0    0     6    13  269   173     9  345     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    187    0    35     0    0     6    13  269   173     9  345     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    187    0    35     0    0     6    13  269   173     9  345     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5 xxxx   6.9 xxxxx xxxx   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  572 xxxx   221  xxxx xxxx   173   345 xxxx xxxxx   442 xxxx xxxxx
Potent Cap.:  407 xxxx   789  xxxx xxxx   847  1225 xxxx xxxxx  1129 xxxx xxxxx
Move Cap.:    399 xxxx   789  xxxx xxxx   847  1225 xxxx xxxxx  1129 xxxx xxxxx
Volume/Cap:  0.47 xxxx  0.04  xxxx xxxx  0.01  0.01 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx   0.0   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx   9.3   8.0 xxxx xxxxx   8.2 xxxx xxxxx
LOS by Move:   *    *     *     *    *     A     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  432 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  2.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx 21.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    C     *     *    *     *     *    *     *     *    *     *
ApproachDel:      21.8              9.3            xxxxxx           xxxxxx
ApproachLOS:        C                A                *                *
```



```
-------------------------------------------------------------------------------
                         Raley's Landing Project
               Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #14 South River Rd/ US 50 WB Rmp
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap. (X):        0.399
Loss Time (sec):       0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        38              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  1  0  1   1  0  1  0  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        0   50    44     3  108     0   170   49    93   320    0     7
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     0   50    44     3  108     0   170   49    93   320    0     7
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      0   50    44     3  108     0   170   49    93   320    0     7
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     0   50    44     3  108     0   170   49    93   320    0     7
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:      0   50    44     3  108     0   170   49    93   320    0     7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:        0.00 1.00  1.00  1.00 1.00  0.00  1.00 0.35  0.65  1.00 0.00  1.00
Final Sat.:      0 1500  1500  1500 1500     0  1500  518   982  1500    0  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.03  0.03  0.00 0.07  0.00  0.11 0.09  0.09  0.21 0.00  0.00
Crit Vol:        0                   108         170               320
Crit Moves:   ****                  ****        ****              ****
*******************************************************************************
```

```
-------------------------------------------------------------------------------
                         Raley's Landing Project
              Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #15 South River Rd/ US 50 On Ramp
*******************************************************************************
Average Delay (sec/veh):      4.1   Worst Case Level Of Service:      B[ 10.5]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Yield Sign       Yield Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  1  0  0  1    0  0  0  0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     401  105     0     1  253   266     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  401  105     0     1  253   266     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   401  105     0     1  253   266     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:   401  105     0     1  253   266     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  519 xxxx xxxxx   105 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: 1057 xxxx xxxxx  1499 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   1057 xxxx xxxxx  1499 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.38 xxxx  xxxx  0.00 xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        1.8 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del: 10.5 xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:   B    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx   7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     A    *     *     *    *     *     *    *     *
ApproachDel:     xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        *                *                *                *
```



```
-------------------------------------------------------------------------------
                         Raley's Landing Project
              Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #17 Front St/ Capital Mall
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.416
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):        5.2
Optimal Cycle:       32              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include           Ignore
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  1  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     1     0    0   121     0 1172     8    27 1164   174
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     1     0    0   121     0 1172     8    27 1164   174
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Volume:     0    0     1     0    0   121     0 1172     8    27 1164     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     1     0    0   121     0 1172     8    27 1164     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:     0    0     1     0    0   121     0 1172     8    27 1164     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  0.87  1.00 1.00  0.87  1.00 0.95  0.95  0.95 0.95  1.00
Lanes:       0.00 0.00  1.00  0.00 0.00  1.00  0.00 1.99  0.01  1.00 2.00  1.00
Final Sat.:     0    0  1644     0    0  1644     0 3582    24  1805 3610  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.00 0.00  0.07  0.00 0.33  0.33  0.01 0.32  0.00
Crit Moves:                               ****       ****        ****
Green/Cycle: 0.00 0.00  0.18  0.00 0.00  0.18  0.00 0.79  0.79  0.04 0.82  0.00
Volume/Cap:  0.00 0.00  0.00  0.00 0.00  0.42  0.00 0.42  0.42  0.42 0.39  0.00
Delay/Veh:    0.0  0.0  33.9   0.0  0.0  37.5   0.0  3.5   3.5  51.4  2.4   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  33.9   0.0  0.0  37.5   0.0  3.5   3.5  51.4  2.4   0.0
HCM2kAvg:       0    0     0     0    0     4     0    6     6     1    5     0
*******************************************************************************
```

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-------------------------------------------------------------------------------
                        Raley's Landing Project
              Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #18 3rd St/ Capital Mall
*******************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.510
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):       21.5
Optimal Cycle:      38              Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  1  2  0  1   0  0  2  1  0   1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0   56  933    40    0  512   159  181  542     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0   56  933    40    0  512   159  181  542     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0   56  933    40    0  512   159  181  542     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0   56  933    40    0  512   159  181  542     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0   56  933    40    0  512   159  181  542     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.70 0.70  0.77 1.00 0.79  0.79 0.86 0.86  1.00
Lanes:       0.00 0.00  0.00 0.17 2.83  1.00 0.00 2.29  0.71 1.00 2.00  0.00
Final Sat.:    0    0     0  225 3743  1454    0 3434  1066 1625 3249     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.25 0.25  0.03 0.00 0.15  0.15 0.11 0.17  0.00
Crit Moves:                       ****              ****       ****
Green/Cycle: 0.00 0.00  0.00 0.49 0.49  0.49 0.00 0.29  0.29 0.22 0.51  0.00
Volume/Cap:  0.00 0.00  0.00 0.51 0.51  0.06 0.00 0.51  0.51 0.51 0.33  0.00
Delay/Veh:    0.0  0.0   0.0 17.6 17.6  13.5  0.0 29.7  29.7 35.6 14.5   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 17.6 17.6  13.5  0.0 29.7  29.7 35.6 14.5   0.0
HCM2kAvg:       0    0     0    8    8     1    0    6     6    6    5     0
*******************************************************************************
```



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-------------------------------------------------------------------------------
                        Raley's Landing Project
              Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #19 3rd St/ J St
*******************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.540
Loss Time (sec):    15 (Y+R =  4 sec) Average Delay (sec/veh):       28.7
Optimal Cycle:      54              Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0   24     0    0   15     0
Lanes:        0  0  0  0  2   1  0  2  0  0   0  1  2  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0   163  213  344     0   27  823   290    7  330   142
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0   163  213  344     0   27  823   290    7  330   142
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0   163  213  344     0   27  823   290    7  330   142
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0   163  213  344     0   27  823   290    7  330   142
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0   163  213  344     0   27  823   290    7  330   142
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  0.67 0.69 0.86  1.00 0.79 0.79  0.79 0.78 0.78  0.78
Lanes:       0.00 0.00  2.00 1.00 2.00  0.00 0.10 2.90  1.00 0.04 2.07  0.89
Final Sat.:    0    0  2558 1315 3249     0  143 4344  1495   65 3072  1322
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.06 0.16 0.11  0.00 0.19 0.19  0.19 0.11 0.11  0.11
Crit Moves:                  ****                   ****            ****
Green/Cycle: 0.00 0.00  0.30 0.30 0.30  0.00 0.36 0.36  0.36 0.20 0.20  0.20
Volume/Cap:  0.00 0.00  0.21 0.54 0.35  0.00 0.53 0.53  0.54 0.54 0.54  0.54
Delay/Veh:    0.0  0.0  26.3 30.7 27.6   0.0 25.6 25.6  25.8 36.6 36.6  36.6
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  26.3 30.7 27.6   0.0 25.6 25.6  25.8 36.6 36.6  36.6
HCM2kAvg:       0    0     2    8    4     0    7    7     8    5    5     5
*******************************************************************************
```

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--------------------------------------------------------------------------------
                     Raley's Landing Project
           Existing Plus Project Condition PM Peak Hour
--------------------------------------------------------------------------------
                  Level Of Service Computation Report
        2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #20 3rd St/ P St
********************************************************************************
Cycle (sec):         50                Critical Vol./Cap. (X):        0.879
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):        18.7
Optimal Cycle:       67                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  1  1  1   0  0  0  0  0   0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  375   769    0    0     0  121 1962     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0    0     0    0  375   769    0    0     0  121 1962     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0    0     0    0  375   769    0    0     0  121 1962     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  375   769    0    0     0  121 1962     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0    0     0    0  375   769    0    0     0  121 1962     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  1.00 0.77  0.77  1.00 1.00  1.00  0.82 0.82  1.00
Lanes:       0.00 0.00  0.00  0.00 1.00  2.00  0.00 0.00  0.00  0.17 2.83  0.00
Final Sat.:    0    0     0    0 1460  2921    0    0     0  271 4397     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.00 0.26  0.26  0.00 0.00  0.00  0.45 0.45  0.00
Crit Moves:                        ****                              ****
Green/Cycle: 0.00 0.00  0.00  0.00 0.29  0.29  0.00 0.00  0.00  0.51 0.51  0.00
Volume/Cap:  0.00 0.00  0.00  0.00 0.88  0.90  0.00 0.00  0.00  0.88 0.88  0.00
Delay/Veh:    0.0  0.0   0.0   0.0 24.0  26.0   0.0  0.0   0.0  15.1 15.1   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0   0.0 24.0  26.0   0.0  0.0   0.0  15.1 15.1   0.0
HCM2kAvg:      0    0     0    0    9    10    0    0     0   14   14     0
********************************************************************************
```



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--------------------------------------------------------------------------------
                     Raley's Landing Project
           Existing Plus Project Condition PM Peak Hour
--------------------------------------------------------------------------------
                  Level Of Service Computation Report
        2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #21 3rd St/ Q St
********************************************************************************
Cycle (sec):        100                Critical Vol./Cap. (X):        0.258
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):        17.2
Optimal Cycle:       26                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  1  2  0  0   0  0  3  1  0   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  187  319     0    0  627    63    0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0    0     0  187  319     0    0  627    63    0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0    0     0  187  319     0    0  627    63    0    0     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  187  319     0    0  627    63    0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0    0     0  187  319     0    0  627    63    0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  0.82 0.82  1.00  1.00 0.81  0.81  1.00 1.00  1.00
Lanes:       0.00 0.00  0.00  1.00 2.00  0.00  0.00 3.63  0.37  0.00 0.00  0.00
Final Sat.:    0    0     0 1556 3112     0    0 5577   560    0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.12 0.10  0.00  0.00 0.11  0.11  0.00 0.00  0.00
Crit Moves:                   ****                   ****
Green/Cycle: 0.00 0.00  0.00  0.46 0.46  0.00  0.00 0.44  0.44  0.00 0.00  0.00
Volume/Cap:  0.00 0.00  0.00  0.26 0.22  0.00  0.00 0.26  0.26  0.00 0.00  0.00
Delay/Veh:    0.0  0.0   0.0  16.3 16.0   0.0   0.0 18.0  18.0   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  16.3 16.0   0.0   0.0 18.0  18.0   0.0  0.0   0.0
HCM2kAvg:      0    0     0    4    3     0    0    3     3    0    0     0
********************************************************************************
```

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-------------------------------------------------------------------------------
                      Raley's Landing Project
           Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #22 Jibboom St/ I St
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.790
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):       30.9
Optimal Cycle:       89              Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       0  0  0  0  0   0  0  1! 0  0   1  0  1  0  0   0  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0   17    0   471  684  190     0    0  217    16
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0   17    0   471  684  190     0    0  217    16
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0   17    0   471  684  190     0    0  217    16
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0   17    0   471  684  190     0    0  217    16
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0   17    0   471  684  190     0    0  217    16
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.86 1.00  0.86 0.95 1.00  1.00 1.00 1.00  0.85
Lanes:       0.00 0.00  0.00 0.03 0.00  0.97 1.00 1.00  0.00 0.00 1.00  1.00
Final Sat.:    0    0     0   57    0  1584 1805 1900     0    0 1900  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.30 0.00  0.30 0.38 0.10  0.00 0.00 0.11  0.01
Crit Moves:                  ****             ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.38 0.00  0.38 0.48 0.62  0.00 0.00 0.14  0.14
Volume/Cap:  0.00 0.00  0.00 0.79 0.00  0.79 0.79 0.16  0.00 0.00 0.79  0.07
Delay/Veh:    0.0  0.0   0.0 34.5  0.0  34.5 26.8  7.9   0.0  0.0 55.6  37.1
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 34.5  0.0  34.5 26.8  7.9   0.0  0.0 55.6  37.1
HCM2kAvg:      0    0     0   15    0    15   20    2     0    0    9     0
*******************************************************************************
```



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-------------------------------------------------------------------------------
                      Raley's Landing Project
           Existing Plus Project Condition PM Peak Hour
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #23 3rd St/ L St
*******************************************************************************
Cycle (sec):         70              Critical Vol./Cap. (X):        0.893
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):       20.0
Optimal Cycle:       85              Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include           Ignore
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       0  0  0  0  0   0  0  2  1  0   0  0  0  0  0   1  1  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  408   366    0    0     0  366 1414   158
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0    0  408   366    0    0     0  366 1414   158
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
PHF Volume:    0    0     0    0  408   366    0    0     0  366 1414     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  408   366    0    0     0  366 1414     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
Final Vol.:    0    0     0    0  408   366    0    0     0  366 1414     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.76  0.76 1.00 1.00  1.00 0.73 0.73  1.00
Lanes:       0.00 0.00  0.00 0.00 2.00  1.00 0.00 0.00  0.00 1.00 2.00  1.00
Final Sat.:    0    0     0    0 2891  1446    0    0     0 1381 2762  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.14  0.25 0.00 0.00  0.00 0.27 0.51  0.00
Crit Moves:                             ****                        ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.28  0.28 0.00 0.00  0.00 0.57 0.57  0.00
Volume/Cap:  0.00 0.00  0.00 0.00 0.50  0.89 0.00 0.00  0.00 0.46 0.89  0.00
Delay/Veh:    0.0  0.0   0.0  0.0 21.2  35.6  0.0  0.0   0.0  8.7 18.6   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0 21.2  35.6  0.0  0.0   0.0  8.7 18.6   0.0
HCM2kAvg:      0    0     0    0    4    11    0    0     0    6   20     0
*******************************************************************************
```

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--------------------------------------------------------------------------------
                          Raley's Landing Project
                 Existing Plus Project Condition PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #27 3rd St/ E St
********************************************************************************
Average Delay (sec/veh):     11.9   Worst Case Level Of Service:       D[ 33.9]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      39  285    60    37  207     7     8   14    20   144   45   121
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   39  285    60    37  207     7     8   14    20   144   45   121
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    39  285    60    37  207     7     8   14    20   144   45   121
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    39  285    60    37  207     7     8   14    20   144   45   121
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  214 xxxx xxxxx   345 xxxx xxxxx   761  708   211   695  681   315
Potent Cap.: 1368 xxxx xxxxx  1225 xxxx xxxxx   325  362   835   360  375   730
Move Cap.:   1368 xxxx xxxxx  1225 xxxx xxxxx   234  341   835   325  353   730
Volume/Cap:  0.03 xxxx  xxxx  0.03 xxxx  xxxx  0.03 0.04  0.02  0.44 0.13  0.17
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.7 xxxx xxxxx   8.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  423 xxxxx  xxxx  421 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.3 xxxxx xxxxx  5.9 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 14.4 xxxxx xxxxx 33.9 xxxxx
Shared LOS:     *    *     *     *    *     *     *    B     *     *    D     *
ApproachDel:     xxxxxx           xxxxxx             14.4             33.9
ApproachLOS:        *                *                 B                D
```

Intersection Capacity Analysis

Cumulative No Project

AM Peak Hour Scenario

Raley's Landing Project
Cumulative No Project
AM Peak Hour

Scenario Report

Scenario:	CumNoProj Am
Command:	CumNoProj AM
Volume:	CumNoProj Am
Geometry:	CumNoProj AM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Cumulative No Project
AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 3rd St/ C St	A	xxxxx	0.494	A	xxxxx	0.494	+ 0.000 V/C
# 2 3rd St/ F St	A	xxxxx	0.407	A	xxxxx	0.407	+ 0.000 V/C
# 3 3rd St/ G St	C	23.4	0.000	C	23.4	0.000	+ 0.000 D/V
# 5 3rd St/ Tower Bridge Gateway	E	xxxxx	0.992	E	xxxxx	0.992	+ 0.000 V/C
# 6 5th St/ C St	A	xxxxx	0.466	A	xxxxx	0.466	+ 0.000 V/C
# 7 5th St/ F St	F	251.6	0.000	F	251.6	0.000	+ 0.000 D/V
# 8 5th St/ G St	C	21.6	0.000	C	21.6	0.000	+ 0.000 D/V
# 9 5th St/ West Capitol Ave	C	16.6	0.000	C	16.6	0.000	+ 0.000 D/V
# 10 5th St/ Tower Bridge Gateway	A	xxxxx	0.541	A	xxxxx	0.541	+ 0.000 V/C
# 11 Jefferson/ West capitol Ave	C	xxxxx	0.741	C	xxxxx	0.741	+ 0.000 V/C
# 12 Jefferson/ Sacramento Ave	C	xxxxx	0.725	C	xxxxx	0.725	+ 0.000 V/C
# 13 Garden/W Capitol Ave	B	xxxxx	0.618	B	xxxxx	0.618	+ 0.000 V/C
# 14 South River Rd/ US 50 WB Rmp	D	xxxxx	0.827	D	xxxxx	0.827	+ 0.000 V/C
# 15 South River Rd/ US 50 On Ramp	A	xxxxx	0.502	A	xxxxx	0.502	+ 0.000 V/C
# 16 Garden/ Tower Bridge Gateway	C	xxxxx	0.796	C	xxxxx	0.796	+ 0.000 V/C
# 17 Front St/ Capital Mall	A	5.9	0.757	A	5.9	0.757	+ 0.000 D/V
# 18 3rd St/ Capital Mall	D	47.6	1.042	D	47.6	1.042	+ 0.000 D/V
# 19 3rd St/ J St	E	75.9	1.078	E	75.9	1.078	+ 0.000 D/V
# 20 3rd St/ P St	B	11.3	0.477	B	11.3	0.477	+ 0.000 D/V
# 21 3rd St/ Q St	B	17.6	0.702	B	17.6	0.702	+ 0.000 D/V
# 22 Jibboom St/ I St	C	31.7	0.774	C	31.7	0.774	+ 0.000 D/V
# 23 3rd St/ L St	B	18.1	0.759	B	18.1	0.759	+ 0.000 D/V

```
# 27 3rd St/ E St                   B  14.1 0.000   B  14.1 0.000  + 0.000 D/V
```

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Raley's Landing Project
Cumulative No Project
AM Peak Hour

```
Intersection                          Base         Future       Change
                                    Del/   V/     Del/   V/        in
                                LOS Veh    C   LOS Veh    C
```

Raley's Landing Project
Cumulative No Project
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #1 3rd St/ C St

Cycle (sec):	100	Critical Vol./Cap. (X):	0.494
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1 0 0 1			0 1 0 0 1			1 0 0 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	12	14	183	43	23	1	3	457	20	219	492	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	14	183	43	23	1	3	457	20	219	492	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	14	183	43	23	1	3	457	20	219	492	36
Reduct Vol:	0	0	183	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	14	0	43	23	1	3	457	20	219	492	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	12	14	0	43	23	1	3	457	20	219	492	36
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.46	0.54	1.00	0.65	0.35	1.00	1.00	0.96	0.04	1.00	1.86	0.14
Final Sat.:	715	835	1550	1010	540	1550	1550	1485	65	1550	2889	211
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.00	0.04	0.04	0.00	0.00	0.31	0.31	0.14	0.17	0.17
Crit Vol:		26		43				477		219		
Crit Moves:		****		****				****		****		

Raley's Landing Project
Cumulative No Project
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #2 3rd St/ F St

Cycle (sec):	100	Critical Vol./Cap. (X):	0.407
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0 1 0			1 0 0 1 0			1 0 0 1 0			1 0 0 1 0		
Volume Module:												
Base Vol:	163	173	42	33	193	40	48	8	206	1	2	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	163	173	42	33	193	40	48	8	206	1	2	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	163	173	42	33	193	40	48	8	206	1	2	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	173	42	33	193	40	48	8	206	1	2	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	163	173	42	33	193	40	48	8	206	1	2	5
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.80	0.20	1.00	0.83	0.17	1.00	0.04	0.96	1.00	0.29	0.71
Final Sat.:	1500	1207	293	1500	1242	258	1500	56	1444	1500	429	1071
Capacity Analysis Module:												
Vol/Sat:	0.11	0.14	0.14	0.02	0.16	0.16	0.03	0.14	0.14	0.00	0.00	0.00
Crit Vol:	163				233				214	1		
Crit Moves:	****				****				****	****		

Raley's Landing Project
Cumulative No Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 3rd St/ G St

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: C[23.4]

Approach:	North Bound	South Bound	East Bound	West Bound
Control:	Uncontrolled	Uncontrolled	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include
Lanes:	1 0 1 0 1	0 0 1! 0 0	1 0 0 1 0	1 0 0 1 0

Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Volume Module:												
Base Vol:	10	394	174	110	388	4	5	2	12	59	0	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	394	174	110	388	4	5	2	12	59	0	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	394	174	110	388	4	5	2	12	59	0	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	10	394	174	110	388	4	5	2	12	59	0	47
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	xxxx	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	405	xxxx	xxxxx	568	xxxx	xxxxx	1155	1211	408	1036	xxxx	401
Potent Cap.:	1165	xxxx	xxxxx	1014	xxxx	xxxxx	176	184	648	212	xxxx	653
Move Cap.:	1152	xxxx	xxxxx	1014	xxxx	xxxxx	145	159	638	185	xxxx	650
Volume/Cap:	0.01	xxxx	xxxx	0.11	xxxx	xxxx	0.03	0.01	0.02	0.32	xxxx	0.07
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	0.4	xxxx	xxxxx	0.1	xxxx	xxxxx	1.3	xxxx	xxxxx
Stopped Del:	8.2	xxxx	xxxxx	9.0	xxxx	xxxxx	30.7	xxxx	xxxxx	33.2	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	D	*	*	D	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	447	xxxx	xxxx	650
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.1	xxxxx	xxxx	0.2
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	13.3	xxxxx	xxxx	11.0
Shared LOS:	*	*	*	*	*	*	*	*	B	*	*	B
ApproachDel:		xxxxxx			xxxxxx			17.9			23.4	
ApproachLOS:		*			*			C			C	

Raley's Landing Project
Cumulative No Project
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #5 3rd St/ Tower Bridge Gateway

Cycle (sec): 100 Critical Vol./Cap. (X): 0.992
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Approach:	North Bound	South Bound	East Bound	West Bound
Control:	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include

Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	2 0	1 1	0	2 0	2 0	1	2 0	2 0	1
Volume Module:												
Base Vol:	110	300	981	182	230	0	0	715	122	982	687	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	300	981	182	230	0	0	715	122	982	687	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	110	300	981	182	230	0	0	715	122	982	687	186
Reduct Vol:	0	0	490	0	0	0	0	0	55	0	0	91
Reduced Vol:	110	300	491	182	230	0	0	715	67	982	687	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.10	1.00	1.00	1.10	1.00	1.00	1.10	1.00	1.00	1.10	1.00	1.00
Final Vol.:	121	300	491	200	230	0	0	715	67	1080	687	95
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	0.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	0	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.04	0.10	0.33	0.07	0.08	0.00	0.00	0.24	0.04	0.36	0.23	0.06
Crit Vol:			491	100				358		540		
Crit Moves:			****	****				****		****		

Raley's Landing Project
Cumulative No Project
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #6 5th St/ C St

Cycle (sec):	100	Critical Vol./Cap. (X):	0.466
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	2	0 1
Volume Module:												
Base Vol:	158	267	178	80	310	41	20	218	261	105	218	174
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	267	178	80	310	41	20	218	261	105	218	174
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	267	178	80	310	41	20	218	261	105	218	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	267	178	80	310	41	20	218	261	105	218	174
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	158	267	178	80	310	41	20	218	261	105	218	174
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.20	0.80	1.00	1.77	0.23	1.00	1.00	1.00	1.00	2.00	1.00
Final Sat.:	1500	1800	1200	1500	2650	350	1500	1500	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.11	0.15	0.15	0.05	0.12	0.12	0.01	0.15	0.17	0.07	0.07	0.12
Crit Vol:	158					176			261	105		
Crit Moves:	****					****			****	****		

Raley's Landing Project
Cumulative No Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 5th St/ F St

Average Delay (sec/veh):	39.8	Worst Case Level Of Service:	F[251.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0	1 0	0 1	0	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	50	479	35	166	495	13	5	51	60	39	64	108
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	479	35	166	495	13	5	51	60	39	64	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	479	35	166	495	13	5	51	60	39	64	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	50	479	35	166	495	13	5	51	60	39	64	108
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	513	xxxx	xxxxx	518	xxxx	xxxxx	1217	1457	263	1210	1446	268
Potent Cap.:	1063	xxxx	xxxxx	1058	xxxx	xxxxx	139	131	742	141	133	736
Move Cap.:	1058	xxxx	xxxxx	1055	xxxx	xxxxx	51	102	736	66	104	729
Volume/Cap:	0.05	xxxx	xxxx	0.16	xxxx	xxxx	0.10	0.50	0.08	0.59	0.62	0.15
Level Of Service Module:												
Queue:	0.1	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	8.6	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	170	xxxxx	xxxx	156	xxxxx
SharedQueue:	0.1	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxxx	4.0	xxxxx	xxxxx	13.0	xxxxx
Shrd StpDel:	8.6	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	62.1	xxxxx	xxxxx	252	xxxxx
Shared LOS:	A	*	*	A	*	*	*	F	*	*	F	*
ApproachDel:		xxxxxx			xxxxxx			62.1			251.6	
ApproachLOS:		*			*			F			F	

```
--------------------------------------------------------------------------------
                           Raley's Landing Project
                            Cumulative No Project
                                AM Peak Hour
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #8 5th St/ G St
********************************************************************************
Average Delay (sec/veh):      0.7   Worst Case Level Of Service:       C[ 21.6]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  1  0  1  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      11  573    10     3  617     1     1     1    34    14     0     2
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   11  573    10     3  617     1     1     1    34    14     0     2
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    11  573    10     3  617     1     1     1    34    14     0     2
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
Final Vol.:    11  573    10     3  617     1     1     1    34    14     0     2
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   7.5 xxxx   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  622 xxxx xxxxx   586 xxxx xxxxx   946 1236   316   921 xxxx   305
Potent Cap.:  969 xxxx xxxxx   999 xxxx xxxxx   219  178   686   229 xxxx   697
Move Cap.:    965 xxxx xxxxx   996 xxxx xxxxx   214  174   682   213 xxxx   690
Volume/Cap:  0.01 xxxx  xxxx  0.00 xxxx  xxxx  0.00 0.01  0.05  0.07 xxxx  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.8 xxxx xxxxx   8.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  597 xxxxx  xxxx  233 xxxxx
SharedQueue:  0.0 xxxx xxxxx   0.0 xxxx xxxxx xxxxx  0.2 xxxxx xxxxx  0.2 xxxxx
Shrd StpDel:  8.8 xxxx xxxxx   8.6 xxxx xxxxx xxxxx 11.4 xxxxx xxxxx 21.6 xxxxx
Shared LOS:     A    *     *     A    *     *     *    B     *     *    C     *
ApproachDel:     xxxxxx           xxxxxx            11.4             21.6
ApproachLOS:        *                *                B                C
```



```
--------------------------------------------------------------------------------
                           Raley's Landing Project
                            Cumulative No Project
                                AM Peak Hour
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #9 5th St/ West Capitol Ave
********************************************************************************
Average Delay (sec/veh):      0.7   Worst Case Level Of Service:       C[ 16.6]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  1  0  0    0  0  2  0  1    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  643     0     0  516    96    42     0    12     0     0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  643     0     0  516    96    42     0    12     0     0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0  643     0     0  516    96    42     0    12     0     0     0
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
Final Vol.:     0  643     0     0  516    96    42     0    12     0     0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.8 xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx   838 xxxx   258  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx   309 xxxx   747  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   309 xxxx   747  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.14 xxxx  0.02  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.5 xxxx   0.0 xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  18.5 xxxx   9.9 xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     C    *     A     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:  9.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:     xxxxxx           xxxxxx            16.6            xxxxxx
ApproachLOS:        *                *                C                *
```

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                           Cumulative No Project
                               AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #10 5th St/ Tower Bridge Gateway
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.541
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       50               Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       3  434   260   145  311   177   155  444     4   185  499   128
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    3  434   260   145  311   177   155  444     4   185  499   128
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     3  434   260   145  311   177   155  444     4   185  499   128
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    3  434   260   145  311   177   155  444     4   185  499   128
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     3  434   260   145  311   177   155  444     4   185  499   128
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 3.00  1.00
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 3000  1500  1500 4500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.14  0.17  0.10 0.10  0.12  0.10 0.15  0.00  0.12 0.11  0.09
Crit Vol:                260   145                    222         185
Crit Moves:             ****  ****                   ****        ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                           Cumulative No Project
                               AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #11 Jefferson/ West capitol Ave
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.741
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       88               Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  2  1  0   1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      45  713    89   284  827   154   299  597   107    73  383   204
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   45  713    89   284  827   154   299  597   107    73  383   204
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    45  713    89   284  827   154   299  597   107    73  383   204
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0   204
Reduced Vol:   45  713    89   284  827   154   299  597   107    73  383     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    45  713    89   284  827   154   299  597   107    73  383     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.78  0.22  1.00 1.69  0.31  1.00 2.54  0.46  1.00 3.00  1.00
Final Sat.:  1500 2667   333  1500 2529   471  1500 3816   684  1500 4500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.27  0.27  0.19 0.33  0.33  0.20 0.16  0.16  0.05 0.09  0.00
Crit Vol:          401         284               299                     128
Crit Moves:       ****        ****              ****                    ****
********************************************************************************
```

Raley's Landing Project
Cumulative No Project
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #12 Jefferson/ Sacramento Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 0.725
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 83 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1 0 1			1 0 1 0 1			1 0 2 0 1			1 0 1 1 0		
Volume Module:												
Base Vol:	507	385	169	26	471	144	131	403	564	127	398	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	507	385	169	26	471	144	131	403	564	127	398	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	507	385	169	26	471	144	131	403	0	127	398	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	507	385	169	26	471	144	131	403	0	127	398	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	558	385	169	26	471	144	131	403	0	127	398	15
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.93	0.07
Final Sat.:	3000	1500	1500	1500	1500	1500	1500	3000	1500	1500	2891	109
Capacity Analysis Module:												
Vol/Sat:	0.19	0.26	0.11	0.02	0.31	0.10	0.09	0.13	0.00	0.08	0.14	0.14
Crit Vol:	279				471		131				207	
Crit Moves:	****				****		****				****	

Raley's Landing Project
Cumulative No Project
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #13 Garden/W Capitol Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 0.618
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1! 0 0			0 0 0 0 0			0 0 1 0 2			1 0 1 0 0		
Volume Module:												
Base Vol:	650	0	0	0	0	0	0	32	892	0	110	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	650	0	0	0	0	0	0	32	892	0	110	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	650	0	0	0	0	0	0	32	892	0	110	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	650	0	0	0	0	0	0	32	892	0	110	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.00	1.00	1.00
Final Vol.:	715	0	0	0	0	0	0	32	981	0	110	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00	1.00	1.00	0.00
Final Sat.:	3100	0	0	0	0	0	0	1550	3100	1550	1550	0
Capacity Analysis Module:												
Vol/Sat:	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.32	0.00	0.07	0.00
Crit Vol:	358				0				491		110	
Crit Moves:	****								****		****	

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                           Cumulative No Project
                               AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #14 South River Rd/ US 50 WB Rmp
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.827
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      132              Level Of Service:                  D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  1  0   1  0  1  1  0   2  0  1  0  1   2  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      84  781   152   146  660    45   633  312   584    81   28    48
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   84  781   152   146  660    45   633  312   584    81   28    48
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    84  781   152   146  660    45   633  312   584    81   28    48
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   84  781   152   146  660    45   633  312   584    81   28    48
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00
Final Vol.:    84  781   152   146  660    45   696  312   584    89   28    48
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.67  0.33  1.00 1.87  0.13  2.00 1.00  1.00  2.00 0.37  0.63
Final Sat.:  1500 2511   489  1500 2809   191  3000 1500  1500  3000  553   947
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.31  0.31  0.10 0.23  0.24  0.23 0.21  0.39  0.03 0.05  0.05
Crit Vol:                467   146                           584    45
Crit Moves:             ****  ****                          ****  ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                           Cumulative No Project
                               AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #15 South River Rd/ US 50 On Ramp
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.502
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       37              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:            Ignore          Include          Include           Ignore
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  0  1   1  0  2  0  1   0  0  0  0  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     345  770     4     3  784   202     0    0     0     3    5     3
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  345  770     4     3  784   202     0    0     0     3    5     3
User Adj:    1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Volume:   345  770     0     3  784   202     0    0     0     3    5     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  345  770     0     3  784   202     0    0     0     3    5     0
PCE Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:   345  770     0     3  784   202     0    0     0     3    5     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 2.00  1.00  0.00 0.00  0.00  1.00 1.00  1.00
Final Sat.:  1550 1550  1550  1550 3100  1550     0    0     0  1550 1550  1550
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.22 0.50  0.00  0.00 0.25  0.13  0.00 0.00  0.00  0.00 0.00  0.00
Crit Vol:           770           3                 0                      5
Crit Moves:        ****        ****                                     ****
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                           Cumulative No Project
                               AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #16 Garden/ Tower Bridge Gateway
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.796
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      112              Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       2  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    588  336     0  437  453     2   15  164   589    0  377   298
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 588  336     0  437  453     2   15  164   589    0  377   298
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  588  336     0  437  453     2   15  164   589    0  377   298
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 588  336     0  437  453     2   15  164   589    0  377   298
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.10 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:  647  336     0  437  453     2   15  164   589    0  377   298
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       2.00 2.00  1.00 1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.00  1.00
Final Sat.:  3000 3000  1500 1500 3000  1500 1500 3000  1500 1500 3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.22 0.11  0.00 0.29 0.15  0.00 0.01 0.05  0.39 0.00 0.13  0.20
Crit Vol:          168        437                             589    0
Crit Moves:        ****       ****                            **** ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                           Cumulative No Project
                               AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #17 Front St/ Capital Mall
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.757
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):       5.9
Optimal Cycle:       77              Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:           Include          Include          Include          Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       0  0  0  0  1   0  0  0  0  1   0  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    20    0    0   149    0 2348     5   27 1460    71
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0    20    0    0   149    0 2348     5   27 1460    71
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
PHF Volume:    0    0    20    0    0   149    0 2348     5   27 1460     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0    20    0    0   149    0 2348     5   27 1460     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00
Final Vol.:    0    0    20    0    0   149    0 2348     5   27 1460     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  0.87 1.00 1.00  0.87 1.00 0.95  0.95 0.95 0.95  1.00
Lanes:       0.00 0.00  1.00 0.00 0.00  1.00 0.00 1.99  0.01 1.00 2.00  1.00
Final Sat.:    0    0  1644    0    0  1644    0 3602     8 1805 3610  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.01 0.00 0.00  0.09 0.00 0.65  0.65 0.01 0.40  0.00
Crit Moves:                             ****      ****        ****
Green/Cycle: 0.00 0.00  0.12 0.00 0.00  0.12 0.00 0.86  0.86 0.02 0.88  0.00
Volume/Cap:  0.00 0.00  0.10 0.00 0.00  0.76 0.00 0.76  0.76 0.76 0.46  0.00
Delay/Veh:    0.0  0.0  39.5  0.0  0.0  58.1  0.0  3.9   3.9 111.1 1.3   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  39.5  0.0  0.0  58.1  0.0  3.9   3.9 111.1 1.3   0.0
HCM2kAvg:      0    0     1    0    0     6    0   16    16    2    5     0
********************************************************************************
```

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-------------------------------------------------------------------------------
                         Raley's Landing Project
                          Cumulative No Project
                              AM Peak Hour
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #18 3rd St/ Capital Mall
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        1.042
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):       47.6
Optimal Cycle:      180              Level Of Service:                 D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       0  0  0  0  0   1  0  2  1  0   0  0  2  1  0   1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  268  560   936    0 1128   365   75  886     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  268  560   936    0 1128   365   75  886     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  268  560   936    0 1128   365   75  886     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  268  560   936    0 1128   365   75  886     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0  268  560   936    0 1128   365   75  886     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.82 0.74  0.74 1.00 0.79  0.79 0.86 0.86  1.00
Lanes:       0.00 0.00  0.00 1.00 2.00  1.00 0.00 2.27  0.73 1.00 2.00  0.00
Final Sat.:    0    0     0 1549 2820  1410    0 3397  1099 1625 3249     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.17 0.20  0.66 0.00 0.33  0.33 0.05 0.27  0.00
Crit Moves:                             ****      ****        ****
Green/Cycle: 0.00 0.00  0.00 0.64 0.64  0.64 0.00 0.32  0.32 0.04 0.36  0.00
Volume/Cap:  0.00 0.00  0.00 0.27 0.31  1.04 0.00 1.04  1.04 1.04 0.75  0.00
Delay/Veh:    0.0  0.0   0.0  8.1  8.3  53.7  0.0 69.6  69.6 166.0 30.7  0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  8.1  8.3  53.7  0.0 69.6  69.6 166.0 30.7  0.0
HCM2kAvg:       0    0     0    4    4    39    0   23    23    6   13     0
*******************************************************************************
```



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-------------------------------------------------------------------------------
                         Raley's Landing Project
                          Cumulative No Project
                              AM Peak Hour
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #19 3rd St/ J St
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        1.078
Loss Time (sec):     15 (Y+R =  4 sec) Average Delay (sec/veh):       75.9
Optimal Cycle:      180              Level Of Service:                 E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0   24     0    0   15     0
Lanes:       0  0  0  0  2   1  0  2  0  0   0  1  2  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    54   99  134     0   38 1783   536    9 1633   390
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0    54   99  134     0   38 1783   536    9 1633   390
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0    54   99  134     0   38 1783   536    9 1633   390
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0    54   99  134     0   38 1783   536    9 1633   390
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0    54   99  134     0   38 1783   536    9 1633   390
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  0.67 0.69 0.86  1.00 0.79 0.79  0.79 0.80 0.80  0.80
Lanes:       0.00 0.00  2.00 1.00 2.00  0.00 0.06 3.03  0.91 0.01 2.41  0.58
Final Sat.:    0    0  2558 1315 3249     0   97 4544  1366   20 3643   870
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.02 0.08 0.04  0.00 0.39 0.39  0.39 0.45 0.45  0.45
Crit Moves:                  ****            ****                  ****
Green/Cycle: 0.00 0.00  0.07 0.07 0.07  0.00 0.36 0.36  0.36 0.42 0.42  0.42
Volume/Cap:  0.00 0.00  0.30 1.08 0.59  0.00 1.08 1.08  1.08 1.08 1.08  1.08
Delay/Veh:    0.0  0.0  45.1 163.0 49.2  0.0 75.8 75.8  75.8 74.4 74.4  74.4
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  45.1 163.0 49.2  0.0 75.8 75.8  75.8 74.4 74.4  74.4
HCM2kAvg:       0    0     1    8    3     0   28   28    28   32   32    32
*******************************************************************************
```

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--------------------------------------------------------------------------------
                           Raley's Landing Project
                            Cumulative No Project
                                AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #20 3rd St/ P St
********************************************************************************
Cycle (sec):        50               Critical Vol./Cap. (X):        0.477
Loss Time (sec):    10 (Y+R =  4 sec) Average Delay (sec/veh):       11.3
Optimal Cycle:      32               Level Of Service:                 B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  1  1  1   0  0  0  0  0   0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  468   408    0    0     0  130  751     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0    0  468   408    0    0     0  130  751     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0    0  468   408    0    0     0  130  751     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  468   408    0    0     0  130  751     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0    0  468   408    0    0     0  130  751     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.80  0.80 1.00 1.00  1.00 0.82 0.82  1.00
Lanes:       0.00 0.00  0.00 0.00 1.60  1.40 0.00 0.00  0.00 0.44 2.56  0.00
Final Sat.:    0    0     0    0 2421  2111    0    0     0  689 3979     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.19  0.19 0.00 0.00  0.00 0.19 0.19  0.00
Crit Moves:                       ****                           ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.40  0.40 0.00 0.00  0.00 0.40 0.40  0.00
Volume/Cap:  0.00 0.00  0.00 0.00 0.48  0.48 0.00 0.00  0.00 0.48 0.48  0.00
Delay/Veh:    0.0  0.0   0.0  0.0 11.2  11.2  0.0  0.0   0.0 11.5 11.5   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0 11.2  11.2  0.0  0.0   0.0 11.5 11.5   0.0
HCM2kAvg:      0    0     0    0    4     4    0    0     0    4    4     0
********************************************************************************
```



```
--------------------------------------------------------------------------------
                           Raley's Landing Project
                            Cumulative No Project
                                AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #21 3rd St/ Q St
********************************************************************************
Cycle (sec):       100               Critical Vol./Cap. (X):        0.702
Loss Time (sec):    10 (Y+R =  4 sec) Average Delay (sec/veh):       17.6
Optimal Cycle:      54               Level Of Service:                 B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  1  2  0  0   0  0  3  1  0   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  331  254     0    0 2203   350    0    0     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  331  254     0    0 2203   350    0    0     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  331  254     0    0 2203   350    0    0     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  331  254     0    0 2203   350    0    0     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0  331  254     0    0 2203   350    0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.82 0.82  1.00 1.00 0.80  0.80 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.00 2.00  0.00 0.00 3.45  0.55 0.00 0.00  0.00
Final Sat.:    0    0     0 1556 3112     0    0 5258   835    0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.21 0.08  0.00 0.00 0.42  0.42 0.00 0.00  0.00
Crit Moves:                  ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.30 0.30  0.00 0.00 0.60  0.60 0.00 0.00  0.00
Volume/Cap:  0.00 0.00  0.00 0.70 0.27  0.00 0.00 0.70  0.70 0.00 0.00  0.00
Delay/Veh:    0.0  0.0   0.0 33.6 26.5   0.0  0.0 14.6  14.6  0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 33.6 26.5   0.0  0.0 14.6  14.6  0.0  0.0   0.0
HCM2kAvg:      0    0     0   10    3     0    0   15    15    0    0     0
********************************************************************************
```

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                           Cumulative No Project
                               AM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #22 Jibboom St/ I St
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.774
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):        31.7
Optimal Cycle:       82               Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       0  0  0  0  0   0  0  1! 0  0   1  0  1  0  0   0  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  107    0   432  475  239     0    0  326     7
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  107    0   432  475  239     0    0  326     7
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  107    0   432  475  239     0    0  326     7
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  107    0   432  475  239     0    0  326     7
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0  107    0   432  475  239     0    0  326     7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.84 1.00  0.84 0.95 1.00  1.00 1.00 1.00  0.85
Lanes:       0.00 0.00  0.00 0.20 0.00  0.80 1.00 1.00  0.00 0.00 1.00  1.00
Final Sat.:    0    0     0  316    0  1274 1805 1900     0    0 1900  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.34 0.00  0.34 0.26 0.13  0.00 0.00 0.17  0.00
Crit Moves:                  ****             ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.44 0.00  0.44 0.34 0.56  0.00 0.00 0.22  0.22
Volume/Cap:  0.00 0.00  0.00 0.77 0.00  0.77 0.77 0.22  0.00 0.00 0.77  0.02
Delay/Veh:    0.0  0.0   0.0 29.3  0.0  29.3 35.6 11.1   0.0  0.0 45.2  30.4
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 29.3  0.0  29.3 35.6 11.1   0.0  0.0 45.2  30.4
HCM2kAvg:       0    0     0   17    0    17   15    4     0    0   11     0
********************************************************************************
```



```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                           Cumulative No Project
                               AM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #23 3rd St/ L St
********************************************************************************
Cycle (sec):         70               Critical Vol./Cap. (X):        0.759
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):        18.1
Optimal Cycle:       57               Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       0  0  0  0  0   0  0  2  1  0   0  0  0  0  0   1  1  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  705   411    0    0     0 1025   77    58
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0    0  705   411    0    0     0 1025   77    58
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0    0  705   411    0    0     0 1025   77    58
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  705   411    0    0     0 1025   77    58
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0    0  705   411    0    0     0 1025   77    58
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.77  0.77 1.00 1.00  1.00 0.73 0.73  0.77
Lanes:       0.00 0.00  0.00 0.00 2.00  1.00 0.00 0.00  0.00 2.00 1.00  1.00
Final Sat.:    0    0     0    0 2941  1471    0    0     0 2762 1381  1454
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.24  0.28 0.00 0.00  0.00 0.37 0.06  0.04
Crit Moves:                             ****             ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.37  0.37 0.00 0.00  0.00 0.49 0.49  0.49
Volume/Cap:  0.00 0.00  0.00 0.00 0.65  0.76 0.00 0.00  0.00 0.76 0.11  0.08
Delay/Veh:    0.0  0.0   0.0  0.0 19.3  21.7  0.0  0.0   0.0 16.9  9.7   9.6
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0 19.3  21.7  0.0  0.0   0.0 16.9  9.7   9.6
HCM2kAvg:       0    0     0    0    7    10    0    0     0   12    1     1
********************************************************************************
```

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--------------------------------------------------------------------------------
                            Raley's Landing Project
                             Cumulative No Project
                                 AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #27 3rd St/ E St
********************************************************************************
Average Delay (sec/veh):      4.2   Worst Case Level Of Service:       B[ 14.1]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      25  151    50    25  212    25    25   50    25    25   25    25
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   25  151    50    25  212    25    25   50    25    25   25    25
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    25  151    50    25  212    25    25   50    25    25   25    25
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    25  151    50    25  212    25    25   50    25    25   25    25
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  237 xxxx xxxxx   201 xxxx xxxxx   526  526   225   538  513   176
Potent Cap.: 1342 xxxx xxxxx  1383 xxxx xxxxx   466  460   820   457  468   872
Move Cap.:   1342 xxxx xxxxx  1383 xxxx xxxxx   421  443   820   394  450   872
Volume/Cap:  0.02 xxxx  xxxx  0.02 xxxx  xxxx  0.06 0.11  0.03  0.06 0.06  0.03
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.7 xxxx xxxxx   7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  494 xxxxx  xxxx  508 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.8 xxxxx xxxxx  0.5 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 14.1 xxxxx xxxxx 13.3 xxxxx
Shared LOS:     *    *     *     *    *     *     *    B     *     *    B     *
ApproachDel:      xxxxxx           xxxxxx             14.1             13.3
ApproachLOS:         *                *                 B                B
```

Intersection Capacity Analysis

Cumulative No Project

PM Peak Hour Scenario

Raley's Landing Project
Cumulative No Project PM Peak Hour

Scenario Report

Scenario:	CumNoProj Pm
Command:	CumNoProj PM
Volume:	CumNoProj Pm
Geometry:	CumNoProj PM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Cumulative No Project PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/Veh	Base V/C	Future LOS	Future Del/Veh	Future V/C	Change in
# 1 3rd St/ C St	B	xxxxx	0.606	B	xxxxx	0.606	+ 0.000 V/C
# 2 3rd St/ F St	A	xxxxx	0.483	A	xxxxx	0.483	+ 0.000 V/C
# 3 3rd St/ G St	E	48.8	0.000	E	48.8	0.000	+ 0.000 D/V
# 5 3rd St/ Tower Bridge Gateway	F	xxxxx	1.050	F	xxxxx	1.050	+ 0.000 V/C
# 6 5th St/ C St	B	xxxxx	0.601	B	xxxxx	0.601	+ 0.000 V/C
# 7 5th St/ F St	F	232.5	0.000	F	232.5	0.000	+ 0.000 D/V
# 8 5th St/ G St	D	26.2	0.000	D	26.2	0.000	+ 0.000 D/V
# 9 5th St/ West Capitol Ave	C	22.6	0.000	C	22.6	0.000	+ 0.000 D/V
# 10 5th St/ Tower Bridge Gateway	B	xxxxx	0.602	B	xxxxx	0.602	+ 0.000 V/C
# 11 Jefferson/ West capitol Ave	D	xxxxx	0.849	D	xxxxx	0.849	+ 0.000 V/C
# 12 Jefferson/ Sacramento Ave	C	xxxxx	0.720	C	xxxxx	0.720	+ 0.000 V/C
# 13 Garden/W Capitol Ave	C	xxxxx	0.728	C	xxxxx	0.728	+ 0.000 V/C
# 14 South River Rd/ US 50 WB Rmp	D	xxxxx	0.876	D	xxxxx	0.876	+ 0.000 V/C
# 15 South River Rd/ US 50 On Ramp	A	xxxxx	0.552	A	xxxxx	0.552	+ 0.000 V/C
# 16 Garden/ Tower Bridge Gateway	D	xxxxx	0.844	D	xxxxx	0.844	+ 0.000 V/C
# 17 Front St/ Capital Mall	A	6.4	0.660	A	6.4	0.660	+ 0.000 D/V
# 18 3rd St/ Capital Mall	C	29.4	0.981	C	29.4	0.981	+ 0.000 D/V
# 19 3rd St/ J St	C	28.9	0.716	C	28.9	0.716	+ 0.000 D/V
# 20 3rd St/ P St	D	38.7	1.012	D	38.7	1.012	+ 0.000 D/V
# 21 3rd St/ Q St	C	21.0	0.570	C	21.0	0.570	+ 0.000 D/V
# 22 Jibboom St/ I St	D	39.1	0.886	D	39.1	0.886	+ 0.000 D/V
# 23 3rd St/ L St	C	20.4	0.901	C	20.4	0.901	+ 0.000 D/V
# 27 3rd St/ E St	C	15.8	0.000	C	15.8	0.000	+ 0.000 D/V

Raley's Landing Project
Cumulative No Project PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #1 3rd St/ C St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.606
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 47 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1 0 0 1			0 1 0 0 1			1 0 0 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	36	30	318	61	27	9	4	539	22	228	466	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	30	318	61	27	9	4	539	22	228	466	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	36	30	318	61	27	9	4	539	22	228	466	82
Reduct Vol:	0	0	228	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	30	90	61	27	9	4	539	22	228	466	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	36	30	90	61	27	9	4	539	22	228	466	82
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.55	0.45	1.00	0.69	0.31	1.00	1.00	0.96	0.04	1.00	1.70	0.30
Final Sat.:	845	705	1550	1074	476	1550	1550	1489	61	1550	2636	464
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.06	0.06	0.06	0.01	0.00	0.36	0.36	0.15	0.18	0.18
Crit Vol:			90	61					561	228		
Crit Moves:			****	****					****	****		

Raley's Landing Project
Cumulative No Project PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #2 3rd St/ F St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.483
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0 1 0			1 0 0 1 0			1 0 0 1 0			1 0 0 1 0		
Volume Module:												
Base Vol:	286	245	14	1	219	58	107	0	109	52	5	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	245	14	1	219	58	107	0	109	52	5	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	245	14	1	219	58	107	0	109	52	5	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	245	14	1	219	58	107	0	109	52	5	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	286	245	14	1	219	58	107	0	109	52	5	50
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.95	0.05	1.00	0.79	0.21	1.00	0.00	1.00	1.00	0.09	0.91
Final Sat.:	1500	1419	81	1500	1186	314	1500	0	1500	1500	136	1364
Capacity Analysis Module:												
Vol/Sat:	0.19	0.17	0.17	0.00	0.18	0.18	0.07	0.00	0.07	0.03	0.04	0.04
Crit Vol:	286					277	107					55
Crit Moves:	****					****	****					****

Raley's Landing Project
Cumulative No Project PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 3rd St/ G St

Average Delay (sec/veh): 9.9 Worst Case Level Of Service: E[48.8]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 1 0 1			0 0 1! 0 0			1 0 0 1 0			1 0 0 1 0		
Volume Module:												
Base Vol:	17	536	96	51	397	4	5	0	12	147	1	115
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	536	96	51	397	4	5	0	12	147	1	115
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	536	96	51	397	4	5	0	12	147	1	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	17	536	96	51	397	4	5	0	12	147	1	115
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	414	xxxx	xxxxx	632	xxxx	xxxxx	1197	xxxx	417	1082	1086	543
Potent Cap.:	1156	xxxx	xxxxx	960	xxxx	xxxxx	164	xxxx	640	197	218	544
Move Cap.:	1143	xxxx	xxxxx	960	xxxx	xxxxx	120	xxxx	631	182	201	540
Volume/Cap:	0.01	xxxx	xxxx	0.05	xxxx	xxxx	0.04	xxxx	0.02	0.81	0.00	0.21
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	0.2	xxxx	xxxxx	0.1	xxxx	xxxxx	5.5	xxxx	xxxxx
Stopped Del:	8.2	xxxx	xxxxx	9.0	xxxx	xxxxx	36.3	xxxx	xxxxx	76.5	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	E	*	*	F	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	631	xxxx	xxxx	533
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.1	xxxxx	xxxx	0.8
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	10.8	xxxxx	xxxx	13.6
Shared LOS:	*	*	*	*	*	*	*	*	B	*	*	B
ApproachDel:		xxxxxx			xxxxxx			18.3			48.8	
ApproachLOS:		*			*			C			E	

Raley's Landing Project
Cumulative No Project PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #5 3rd St/ Tower Bridge Gateway

Cycle (sec): 100 Critical Vol./Cap. (X): 1.050
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2 0 1			2 0 1 1 0			2 0 2 0 1			2 0 2 0 1		
Volume Module:												
Base Vol:	229	274	1067	148	295	0	0	747	124	1068	691	273
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	229	274	1067	148	295	0	0	747	124	1068	691	273
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	229	274	1067	148	295	0	0	747	124	1068	691	273
Reduct Vol:	0	0	534	0	0	0	0	0	74	0	0	114
Reduced Vol:	229	274	533	148	295	0	0	747	50	1068	691	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.10	1.00	1.00	1.10	1.00	1.00	1.10	1.00	1.00	1.10	1.00	1.00
Final Vol.:	252	274	533	163	295	0	0	747	50	1175	691	159
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	0.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	3000	1500	3000	3000	0	3000	3000	1500	3000	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.08	0.09	0.36	0.05	0.10	0.00	0.00	0.25	0.03	0.39	0.23	0.11
Crit Vol:			533	81				374		587		
Crit Moves:			****	****				****		****		

```
------------------------------------------------------------------------------
                        Raley's Landing Project
                  Cumulative No Project PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
******************************************************************************
Intersection #6 5th St/ C St
******************************************************************************
Cycle (sec):       100             Critical Vol./Cap. (X):        0.601
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      57             Level Of Service:                  B
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     300  339   134   121  372    20    37  340   240   116  428    55
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  300  339   134   121  372    20    37  340   240   116  428    55
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   300  339   134   121  372    20    37  340   240   116  428    55
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  300  339   134   121  372    20    37  340   240   116  428    55
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   300  339   134   121  372    20    37  340   240   116  428    55
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.43  0.57  1.00 1.90  0.10  1.00 1.17  0.83  1.00 2.00  1.00
Final Sat.:  1500 2150   850  1500 2847   153  1500 1759  1241  1500 3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.16  0.16  0.08 0.13  0.13  0.02 0.19  0.19  0.08 0.14  0.04
Crit Vol:     300                           196               290   116
Crit Moves:  ****                          ****              ****  ****
******************************************************************************
```



```
------------------------------------------------------------------------------
                        Raley's Landing Project
                  Cumulative No Project PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #7 5th St/ F St
******************************************************************************
Average Delay (sec/veh):     49.0   Worst Case Level Of Service:      F[232.5]
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0   0  1  0  1  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      28  498    95    82  586     6    13   43   104    48   75   212
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   28  498    95    82  586     6    13   43   104    48   75   212
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    28  498    95    82  586     6    13   43   104    48   75   212
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    28  498    95    82  586     6    13   43   104    48   75   212
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   7.5  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  597 xxxx xxxxx   597 xxxx xxxxx  1108 1411   305  1088 1367   308
Potent Cap.:  989 xxxx xxxxx   989 xxxx xxxxx   167  140   697   173  148   694
Move Cap.:    985 xxxx xxxxx   986 xxxx xxxxx    57  123   692    97  130   688
Volume/Cap:  0.03 xxxx  xxxx  0.08 xxxx  xxxx  0.23 0.35  0.15  0.49 0.58  0.31
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.8 xxxx xxxxx   9.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  220 xxxxx  xxxx  243 xxxxx
SharedQueue:  0.1 xxxx xxxxx   0.3 xxxx xxxxx xxxxx  4.9 xxxxx xxxxx 18.3 xxxxx
Shrd StpDel:  8.8 xxxx xxxxx   9.0 xxxx xxxxx xxxxx 55.6 xxxxx xxxxx  233 xxxxx
Shared LOS:     A    *     *     A    *     *     *    F     *     *    F     *
ApproachDel:     xxxxxx           xxxxxx             55.6             232.5
ApproachLOS:        *                *                 F                F
```

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                    Cumulative No Project PM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #8 5th St/ G St
********************************************************************************
Average Delay (sec/veh):      0.9   Worst Case Level Of Service:       D[ 26.2]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0    0  1  0  1  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      25  641    16     5  733     2     2    0    50    12    2     5
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   25  641    16     5  733     2     2    0    50    12    2     5
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    25  641    16     5  733     2     2    0    50    12    2     5
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    25  641    16     5  733     2     2    0    50    12    2     5
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5 xxxx   6.9   7.5  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5 xxxx   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  739 xxxx xxxxx   660 xxxx xxxxx  1130 xxxx   375  1081 1451   342
Potent Cap.:  876 xxxx xxxxx   938 xxxx xxxxx   161 xxxx   629   175  132   660
Move Cap.:    874 xxxx xxxxx   935 xxxx xxxxx   152 xxxx   625   156  127   653
Volume/Cap:  0.03 xxxx  xxxx  0.01 xxxx  xxxx  0.01 xxxx  0.08  0.08 0.02  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  9.2 xxxx xxxxx   8.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  558 xxxxx  xxxx  189 xxxxx
SharedQueue:  0.1 xxxx xxxxx   0.0 xxxx xxxxx xxxxx  0.3 xxxxx xxxxx  0.3 xxxxx
Shrd StpDel:  9.2 xxxx xxxxx   8.9 xxxx xxxxx xxxxx 12.1 xxxxx xxxxx 26.2 xxxxx
Shared LOS:     A    *     *     A    *     *     *    B     *     *    D     *
ApproachDel:     xxxxxx           xxxxxx             12.1             26.2
ApproachLOS:        *                *                 B                D
```



```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                    Cumulative No Project PM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #9 5th St/ West Capitol Ave
********************************************************************************
Average Delay (sec/veh):      0.8   Worst Case Level Of Service:       C[ 22.6]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  1  0  0    0  0  2  0  1    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  674     0     0  692   169    49    0     8     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  674     0     0  692   169    49    0     8     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0  674     0     0  692   169    49    0     8     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     0  674     0     0  692   169    49    0     8     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.8 xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  1029 xxxx   346  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx   233 xxxx   656  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   233 xxxx   656  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.21 xxxx  0.01  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.8 xxxx   0.0 xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  24.5 xxxx  10.6 xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     C    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:  9.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:     xxxxxx           xxxxxx             22.6           xxxxxx
ApproachLOS:        *                *                 C                *
```

```
--------------------------------------------------------------------------------
                         Raley's Landing Project
                   Cumulative No Project PM Peak Hour
--------------------------------------------------------------------------------
                   Level Of Service Computation Report
      Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #10 5th St/ Tower Bridge Gateway
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.602
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):    xxxxxx
Optimal Cycle:      57              Level Of Service:                  B
********************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      13  553   271   223  330   221   157  385     4   211  692    47
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   13  553   271   223  330   221   157  385     4   211  692    47
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    13  553   271   223  330   221   157  385     4   211  692    47
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   13  553   271   223  330   221   157  385     4   211  692    47
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    13  553   271   223  330   221   157  385     4   211  692    47
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 3.00  1.00
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 3000  1500  1500 4500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.18  0.18  0.15 0.11  0.15  0.10 0.13  0.00  0.14 0.15  0.03
Crit Vol:          277         223                   193         211
Crit Moves:       ****        ****                  ****        ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                         Raley's Landing Project
                   Cumulative No Project PM Peak Hour
--------------------------------------------------------------------------------
                   Level Of Service Computation Report
      Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #11 Jefferson/ West capitol Ave
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.849
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):    xxxxxx
Optimal Cycle:     151              Level Of Service:                  D
********************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       1  0  1  1  0   1  0  1  1  0   1  0  2  1  0   1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     129  697   131   267  927   241   317  658   173   284  708   319
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  129  697   131   267  927   241   317  658   173   284  708   319
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   129  697   131   267  927   241   317  658   173   284  708   319
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0   267
Reduced Vol:  129  697   131   267  927   241   317  658   173   284  708    52
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   129  697   131   267  927   241   317  658   173   284  708    52
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.68  0.32  1.00 1.59  0.41  1.00 2.38  0.62  1.00 3.00  1.00
Final Sat.:  1500 2525   475  1500 2381   619  1500 3563   937  1500 4500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.28  0.28  0.18 0.39  0.39  0.21 0.18  0.18  0.19 0.16  0.03
Crit Vol:     129                    584                   277   284
Crit Moves:  ****                   ****                  ****  ****
********************************************************************************
```

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative No Project PM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #12 Jefferson/ Sacramento Ave
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.720
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       81              Level Of Service:                   C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Ignore           Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       2  0  1  0  1   1  0  1  0  1   1  0  2  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     380   511   237    23   374   146   212   483   689   255   395    35
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  380   511   237    23   374   146   212   483   689   255   395    35
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
PHF Volume:   380   511   237    23   374   146   212   483     0   255   395    35
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  380   511   237    23   374   146   212   483     0   255   395    35
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
MLF Adj:     1.10  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
Final Vol.:   418   511   237    23   374   146   212   483     0   255   395    35
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500  1500  1500  1500  1500  1500  1500  1500  1500  1500  1500  1500
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       2.00  1.00  1.00  1.00  1.00  1.00  1.00  2.00  1.00  1.00  1.84  0.16
Final Sat.:  3000  1500  1500  1500  1500  1500  1500  3000  1500  1500  2756   244
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14  0.34  0.16  0.02  0.25  0.10  0.14  0.16  0.00  0.17  0.14  0.14
Crit Vol:     209                     374               242         255
Crit Moves:  ****                    ****              ****        ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative No Project PM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #13 Garden/W Capitol Ave
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.728
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       68              Level Of Service:                   C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  1! 0  0   0  0  0  0  0   0  0  1  0  2   1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     981     0     0     0     0     0     0    31   853     0   119     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  981     0     0     0     0     0     0    31   853     0   119     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   981     0     0     0     0     0     0    31   853     0   119     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  981     0     0     0     0     0     0    31   853     0   119     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.10  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.10  1.00  1.00  1.00
Final Vol.:  1079     0     0     0     0     0     0    31   938     0   119     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550  1550  1550  1550  1550  1550  1550  1550  1550  1550  1550  1550
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       2.00  0.00  0.00  0.00  0.00  0.00  0.00  1.00  2.00  1.00  1.00  0.00
Final Sat.:  3100     0     0     0     0     0     0  1550  3100  1550  1550     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.35  0.00  0.00  0.00  0.00  0.00  0.00  0.02  0.30  0.00  0.08  0.00
Crit Vol:     540                       0                     469         119
Crit Moves:  ****                                            ****        ****
*******************************************************************************
```

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--------------------------------------------------------------------------------
                          Raley's Landing Project
                     Cumulative No Project PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #14 South River Rd/ US 50 WB Rmp
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.876
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      180               Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  1  0   1  0  1  1  0   2  0  1  0  1   2  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      88  802    48   215  883    13   564   88   494   328   33    55
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   88  802    48   215  883    13   564   88   494   328   33    55
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    88  802    48   215  883    13   564   88   494   328   33    55
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   88  802    48   215  883    13   564   88   494   328   33    55
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00
Final Vol.:    88  802    48   215  883    13   620   88   494   361   33    55
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.89  0.11  1.00 1.97  0.03  2.00 1.00  1.00  2.00 0.38  0.62
Final Sat.:  1500 2831   169  1500 2956    44  3000 1500  1500  3000  563   938
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.28  0.28  0.14 0.30  0.30  0.21 0.06  0.33  0.12 0.06  0.06
Crit Vol:                425   215                           494   180
Crit Moves:             ****  ****                          ****  ****
********************************************************************************
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--------------------------------------------------------------------------------
                          Raley's Landing Project
                     Cumulative No Project PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #15 South River Rd/ US 50 On Ramp
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.552
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       42               Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:           Ignore           Include          Include           Ignore
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  0  1   1  0  2  0  1   0  0  0  0  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     336  654     0     1  988   520     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  336  654     0     1  988   520     0    0     0     0    0     0
User Adj:    1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Volume:   336  654     0     1  988   520     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  336  654     0     1  988   520     0    0     0     0    0     0
PCE Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:   336  654     0     1  988   520     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 2.00  1.00  0.00 0.00  0.00  1.00 1.00  1.00
Final Sat.:  1550 1550  1550  1550 3100  1550     0    0     0  1550 1550  1550
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.22 0.42  0.00  0.00 0.32  0.34  0.00 0.00  0.00  0.00 0.00  0.00
Crit Vol:     336                            520     0                     0
Crit Moves:  ****                           ****
********************************************************************************
```

Raley's Landing Project
Cumulative No Project PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #16 Garden/ Tower Bridge Gateway

Cycle (sec): 100 Critical Vol./Cap. (X): 0.844
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 146 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2 0 1			1 0 2 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	1001	554	0	373	480	0	3	166	476	0	493	423
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1001	554	0	373	480	0	3	166	476	0	493	423
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1001	554	0	373	480	0	3	166	476	0	493	423
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1001	554	0	373	480	0	3	166	476	0	493	423
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	1101	554	0	373	480	0	3	166	476	0	493	423
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	1500	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.37	0.18	0.00	0.25	0.16	0.00	0.00	0.06	0.32	0.00	0.16	0.28
Crit Vol:	551				240				476	0		
Crit Moves:	****				****				****	****		

Raley's Landing Project
Cumulative No Project PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Front St/ Capital Mall

Cycle (sec): 100 Critical Vol./Cap. (X): 0.660
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 6.4
Optimal Cycle: 55 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Permitted			Permitted			Protected			Protected	
Rights:		Include			Include			Include			Ignore	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0 0 1			0 0 0 0 1			0 0 1 1 0			1 0 2 0 1		
Volume Module:												
Base Vol:	0	0	1	0	0	187	0	1907	8	27	1645	238
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	1	0	0	187	0	1907	8	27	1645	238
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	1	0	0	187	0	1907	8	27	1645	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	1	0	0	187	0	1907	8	27	1645	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	1	0	0	187	0	1907	8	27	1645	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.87	1.00	1.00	0.87	1.00	0.95	0.95	0.95	0.95	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.99	0.01	1.00	2.00	1.00
Final Sat.:	0	0	1644	0	0	1644	0	3591	15	1805	3610	1900
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.53	0.53	0.01	0.46	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.17	0.00	0.00	0.17	0.00	0.80	0.80	0.02	0.83	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.66	0.66	0.66	0.55	0.00
Delay/Veh:	0.0	0.0	34.3	0.0	0.0	44.3	0.0	4.6	4.6	81.8	3.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	34.3	0.0	0.0	44.3	0.0	4.6	4.6	81.8	3.0	0.0
HCM2kAvg:	0	0	0	0	0	7	0	13	13	2	8	0

Raley's Landing Project
Cumulative No Project PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 3rd St/ Capital Mall

Cycle (sec): 100 Critical Vol./Cap. (X): 0.981
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 29.4
Optimal Cycle: 180 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Permitted			Permitted			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		0 0 0 0 0			1 0 2 1 0			0 0 2 1 0			1 0 2 0 0	
Volume Module:												
Base Vol:	0	0	0	82	1321	826	0	753	576	35	1073	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	82	1321	826	0	753	576	35	1073	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	82	1321	826	0	753	576	35	1073	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	82	1321	826	0	753	576	35	1073	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	82	1321	826	0	753	576	35	1073	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	0.77	0.77	1.00	0.77	0.77	0.86	0.86	1.00
Lanes:	0.00	0.00	0.00	1.00	2.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1611	2932	1466	0	2910	1455	1625	3249	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.45	0.56	0.00	0.26	0.40	0.02	0.33	0.00
Crit Moves:						****			****	****		
Green/Cycle:	0.00	0.00	0.00	0.57	0.57	0.57	0.00	0.40	0.40	0.02	0.43	0.00
Volume/Cap:	0.00	0.00	0.00	0.09	0.78	0.98	0.00	0.64	0.98	0.98	0.78	0.00
Delay/Veh:	0.0	0.0	0.0	9.6	18.0	35.7	0.0	24.7	49.4	191.6	27.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	9.6	18.0	35.7	0.0	24.7	49.4	191.6	27.5	0.0
HCM2kAvg:	0	0	0	1	17	32	0	10	24	3	16	0

Raley's Landing Project
Cumulative No Project PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 3rd St/ J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.716
Loss Time (sec): 15 (Y+R = 4 sec) Average Delay (sec/veh): 28.9
Optimal Cycle: 69 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Permitted			Permitted			Split Phase			Split Phase	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	24	0	0	15	0
Lanes:		0 0 0 1 1			1 0 2 0 0			0 1 2 1 0			0 1 1 1 0	
Volume Module:												
Base Vol:	0	3	163	159	344	0	95	1184	512	6	567	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3	163	159	344	0	95	1184	512	6	567	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3	163	159	344	0	95	1184	512	6	567	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3	163	159	344	0	95	1184	512	6	567	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3	163	159	344	0	95	1184	512	6	567	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.69	0.86	1.00	0.78	0.78	0.78	0.80	0.80	0.80
Lanes:	0.00	0.04	1.96	1.00	2.00	0.00	0.22	2.78	1.00	0.03	2.60	0.37
Final Sat.:	0	53	2865	1312	3249	0	331	4123	1485	42	3970	567
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.12	0.11	0.00	0.29	0.29	0.34	0.14	0.14	0.14
Crit Moves:				****					****		****	
Green/Cycle:	0.00	0.17	0.17	0.17	0.17	0.00	0.48	0.48	0.48	0.20	0.20	0.20
Volume/Cap:	0.00	0.34	0.34	0.72	0.63	0.00	0.60	0.60	0.72	0.72	0.72	0.72
Delay/Veh:	0.0	37.0	37.0	49.9	40.9	0.0	19.2	19.2	21.5	40.1	40.1	40.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	37.0	37.0	49.9	40.9	0.0	19.2	19.2	21.5	40.1	40.1	40.1
HCM2kAvg:	0	3	3	8	6	0	10	10	14	8	8	8

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative No Project PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #20 3rd St/ P St
*******************************************************************************
Cycle (sec):          50              Critical Vol./Cap. (X):        1.012
Loss Time (sec):      10 (Y+R =  4 sec) Average Delay (sec/veh):      38.7
Optimal Cycle:       105              Level Of Service:                 D
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:          Permitted        Permitted        Permitted        Permitted
Rights:            Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:         0  0  0  0  0   0  0  1  1  1   0  0  0  0  0   0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    0  806   816    0    0     0  130 1968     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0     0    0  806   816    0    0     0  130 1968     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     0    0     0    0  806   816    0    0     0  130 1968     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0    0  806   816    0    0     0  130 1968     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:     0    0     0    0  806   816    0    0     0  130 1968     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.79  0.79 1.00 1.00  1.00 0.82 0.82  1.00
Lanes:       0.00 0.00  0.00 0.00 1.49  1.51 0.00 0.00  0.00 0.19 2.81  0.00
Final Sat.:     0    0     0    0 2240  2268    0    0     0  289 4379     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.36  0.36 0.00 0.00  0.00 0.45 0.45  0.00
Crit Moves:                       ****                            ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.36  0.36 0.00 0.00  0.00 0.44 0.44  0.00
Volume/Cap:  0.00 0.00  0.00 0.00 1.01  1.01 0.00 0.00  0.00 1.01 1.01  0.00
Delay/Veh:    0.0  0.0   0.0  0.0 41.5  41.5  0.0  0.0   0.0 36.5 36.5   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0 41.5  41.5  0.0  0.0   0.0 36.5 36.5   0.0
HCM2kAvg:       0    0     0    0   16    16    0    0     0   20   20     0
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative No Project PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #21 3rd St/ Q St
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap. (X):        0.570
Loss Time (sec):      10 (Y+R =  4 sec) Average Delay (sec/veh):      21.0
Optimal Cycle:        41              Level Of Service:                 C
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:          Permitted        Permitted        Permitted        Permitted
Rights:            Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:         0  0  0  0  0   0  1  2  0  0   0  0  3  1  0   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0  507  439     0    0  921   211    0    0     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0     0  507  439     0    0  921   211    0    0     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     0    0     0  507  439     0    0  921   211    0    0     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0  507  439     0    0  921   211    0    0     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:     0    0     0  507  439     0    0  921   211    0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.82 0.82  1.00 1.00 0.80  0.80 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.00 2.00  0.00 0.00 3.25  0.75 0.00 0.00  0.00
Final Sat.:     0    0     0 1556 3112     0    0 4922  1128    0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.33 0.14  0.00 0.00 0.19  0.19 0.00 0.00  0.00
Crit Moves:                  ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.57 0.57  0.00 0.00 0.33  0.33 0.00 0.00  0.00
Volume/Cap:  0.00 0.00  0.00 0.57 0.25  0.00 0.00 0.57  0.57 0.00 0.00  0.00
Delay/Veh:    0.0  0.0   0.0 14.1 10.7   0.0  0.0 28.1  28.1  0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 14.1 10.7   0.0  0.0 28.1  28.1  0.0  0.0   0.0
HCM2kAvg:       0    0     0   10    3     0    0    8     8    0    0     0
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                           Raley's Landing Project
                     Cumulative No Project PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #22 Jibboom St/ I St
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.886
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):        39.1
Optimal Cycle:      164               Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  1! 0  0   1  0  1  0  0   0  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0   17    0   457  751  256     0    0  345    12
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0   17    0   457  751  256     0    0  345    12
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0   17    0   457  751  256     0    0  345    12
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0   17    0   457  751  256     0    0  345    12
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0   17    0   457  751  256     0    0  345    12
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.86 1.00  0.86 0.95 1.00  1.00 1.00 1.00  0.85
Lanes:       0.00 0.00  0.00 0.04 0.00  0.96 1.00 1.00  0.00 0.00 1.00  1.00
Final Sat.:    0    0     0   59    0  1583 1805 1900     0    0 1900  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.29 0.00  0.29 0.42 0.13  0.00 0.00 0.18  0.01
Crit Moves:                  ****            ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.33 0.00  0.33 0.47 0.67  0.00 0.00 0.20  0.20
Volume/Cap:  0.00 0.00  0.00 0.89 0.00  0.89 0.89 0.20  0.00 0.00 0.89  0.04
Delay/Veh:    0.0  0.0   0.0 48.3  0.0  48.3 35.2  6.2   0.0  0.0 59.6  31.9
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 48.3  0.0  48.3 35.2  6.2   0.0  0.0 59.6  31.9
HCM2kAvg:       0    0     0   17    0    17   25    3     0    0   14     0
********************************************************************************
```



```
--------------------------------------------------------------------------------
                           Raley's Landing Project
                     Cumulative No Project PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #23 3rd St/ L St
********************************************************************************
Cycle (sec):         70               Critical Vol./Cap. (X):        0.901
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):        20.4
Optimal Cycle:       88               Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  2  1  0   0  0  0  0  0   1  1  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  589   345    0    0     0 1385  841   161
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0    0  589   345    0    0     0 1385  841   161
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0    0  589   345    0    0     0 1385  841   161
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  589   345    0    0     0 1385  841   161
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0    0  589   345    0    0     0 1385  841   161
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.77  0.77 1.00 1.00  1.00 0.73 0.73  0.77
Lanes:       0.00 0.00  0.00 0.00 2.00  1.00 0.00 0.00  0.00 1.87 1.13  1.00
Final Sat.:    0    0     0    0 2941  1471    0    0     0 2577 1565  1454
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.20  0.23 0.00 0.00  0.00 0.54 0.54  0.11
Crit Moves:                             ****                       ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.26  0.26 0.00 0.00  0.00 0.60 0.60  0.60
Volume/Cap:  0.00 0.00  0.00 0.00 0.77  0.90 0.00 0.00  0.00 0.90 0.90  0.19
Delay/Veh:    0.0  0.0   0.0  0.0 27.0  35.7  0.0  0.0   0.0 17.3 17.3   6.5
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0 27.0  35.7  0.0  0.0   0.0 17.3 17.3   6.5
HCM2kAvg:       0    0     0    0    8    11    0    0     0   21   21     2
********************************************************************************
```

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                    Cumulative No Project PM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #27 3rd St/ E St
********************************************************************************
Average Delay (sec/veh):      2.9   Worst Case Level Of Service:       C[ 15.8]
********************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      25  352    25    10  257    10    25   10    25    25   25    25
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   25  352    25    10  257    10    25   10    25    25   25    25
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    25  352    25    10  257    10    25   10    25    25   25    25
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    25  352    25    10  257    10    25   10    25    25   25    25
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  267 xxxx xxxxx   377 xxxx xxxxx   722  709   262   714  702   365
Potent Cap.: 1308 xxxx xxxxx  1193 xxxx xxxxx   345  362   782   349  365   685
Move Cap.:   1308 xxxx xxxxx  1193 xxxx xxxxx   308  352   782   324  355   685
Volume/Cap:  0.02 xxxx  xxxx  0.01 xxxx  xxxx  0.08 0.03  0.03  0.08 0.07  0.04
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  7.8 xxxx xxxxx   8.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  424 xxxxx  xxxx  407 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.5 xxxxx xxxxx  0.7 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 14.9 xxxxx xxxxx 15.8 xxxxx
Shared LOS:     *    *     *     *    *     *     *    B     *     *    C     *
ApproachDel:     xxxxxx           xxxxxx             14.9             15.8
ApproachLOS:        *                *                B                C
```

Intersection Capacity Analysis

Cumulative Plus Project

AM Peak Hour Scenario

Raley's Landing Project
Cumulative Plus Project AM Peak Hour

Scenario Report

Scenario:	CumPProj Am
Command:	CumPProj AM
Volume:	CumPProj Am
Geometry:	CumPProj AM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Cumulative Plus Project AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 1 3rd St/ C St	B	xxxxx	0.664	B	xxxxx	0.664	+ 0.000 V/C
# 2 3rd St/ F St	B	xxxxx	0.673	B	xxxxx	0.673	+ 0.000 V/C
# 3 3rd St/ G St	F	888.9	0.000	F	888.9	0.000	+ 0.000 D/V
# 5 3rd St/ Tower Bridge Gateway	F	xxxxx	1.061	F	xxxxx	1.061	+ 0.000 V/C
# 6 5th St/ C St	B	xxxxx	0.683	B	xxxxx	0.683	+ 0.000 V/C
# 7 5th St/ F St	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 8 5th St/ G St	F	366.0	0.000	F	366.0	0.000	+ 0.000 D/V
# 9 5th St/ West Capitol Ave	C	19.4	0.000	C	19.4	0.000	+ 0.000 D/V
# 10 5th St/ Tower Bridge Gateway	C	xxxxx	0.717	C	xxxxx	0.717	+ 0.000 V/C
# 11 Jefferson/ West capitol Ave	C	xxxxx	0.755	C	xxxxx	0.755	+ 0.000 V/C
# 12 Jefferson/ Sacramento Ave	C	xxxxx	0.777	C	xxxxx	0.777	+ 0.000 V/C
# 13 Garden/W Capitol Ave	B	xxxxx	0.664	B	xxxxx	0.664	+ 0.000 V/C
# 14 South River Rd/ US 50 WB Rmp	D	xxxxx	0.844	D	xxxxx	0.844	+ 0.000 V/C
# 15 South River Rd/ US 50 On Ramp	A	xxxxx	0.524	A	xxxxx	0.524	+ 0.000 V/C
# 16 Garden/ Tower Bridge Gateway	D	xxxxx	0.831	D	xxxxx	0.831	+ 0.000 V/C
# 17 Front St/ Capital Mall	A	8.7	0.850	A	8.7	0.850	+ 0.000 D/V
# 18 3rd St/ Capital Mall	E	61.7	1.105	E	61.7	1.105	+ 0.000 D/V
# 19 3rd St/ J St	F	94.2	1.126	F	94.2	1.126	+ 0.000 D/V
# 20 3rd St/ P St	B	11.5	0.509	B	11.5	0.509	+ 0.000 D/V
# 21 3rd St/ Q St	B	19.1	0.732	B	19.1	0.732	+ 0.000 D/V
# 22 Jibboom St/ I St	E	55.2	0.972	E	55.2	0.972	+ 0.000 D/V
# 23 3rd St/ L St	C	20.5	0.852	C	20.5	0.852	+ 0.000 D/V
# 27 3rd St/ E St	F	918.6	0.000	F	918.6	0.000	+ 0.000 D/V

```
-------------------------------------------------------------------------------
                            Raley's Landing Project
                    Cumulative Plus Project AM Peak Hour
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
             Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 3rd St/ C St
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.664
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       55               Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  1  0  0  1   0  1  0  0  1   1  0  0  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      12   17   290    43   28     1     3  457    22   478  492    36
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   12   17   290    43   28     1     3  457    22   478  492    36
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    12   17   290    43   28     1     3  457    22   478  492    36
Reduct Vol:     0    0   290     0    0     0     0    0     0     0    0     0
Reduced Vol:   12   17     0    43   28     1     3  457    22   478  492    36
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    12   17     0    43   28     1     3  457    22   478  492    36
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.41 0.59  1.00  0.61 0.39  1.00  1.00 0.95  0.05  1.00 1.86  0.14
Final Sat.:   641  909  1550   939  611  1550  1550 1479    71  1550 2889   211
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.02  0.00  0.05 0.05  0.00  0.00 0.31  0.31  0.31 0.17  0.17
Crit Vol:           29          43                   479         478
Crit Moves:       ****        ****                  ****        ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                            Raley's Landing Project
                    Cumulative Plus Project AM Peak Hour
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
             Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #2 3rd St/ F St
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.673
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       70               Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     180  484   149    54  358    53   131   34   232    57   22    30
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  180  484   149    54  358    53   131   34   232    57   22    30
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   180  484   149    54  358    53   131   34   232    57   22    30
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  180  484   149    54  358    53   131   34   232    57   22    30
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   180  484   149    54  358    53   131   34   232    57   22    30
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.76  0.24  1.00 0.87  0.13  1.00 0.13  0.87  1.00 0.42  0.58
Final Sat.:  1500 1147   353  1500 1307   193  1500  192  1308  1500  635   865
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.42  0.42  0.04 0.27  0.27  0.09 0.18  0.18  0.04 0.03  0.03
Crit Vol:          633          54                   266          57
Crit Moves:       ****        ****                  ****        ****
*******************************************************************************
```

```
------------------------------------------------------------------------------
                         Raley's Landing Project
                  Cumulative Plus Project AM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #3 3rd St/ G St
******************************************************************************
Average Delay (sec/veh):     46.7   Worst Case Level Of Service:      F[888.9]
******************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:       1  0  1  0  1    0  0  1! 0  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     278  829   174   110  632     7     6    2    34    59    0    47
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  278  829   174   110  632     7     6    2    34    59    0    47
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   278  829   174   110  632     7     6    2    34    59    0    47
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:   278  829   174   110  632     7     6    2    34    59    0    47
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1 xxxx   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  652 xxxx xxxxx  1003 xxxx xxxxx  2371 2428   654  2264 xxxx   836
Potent Cap.:  944 xxxx xxxxx   698 xxxx xxxxx    25   33   471    29 xxxx   370
Move Cap.:    934 xxxx xxxxx   698 xxxx xxxxx    14   19   464    17 xxxx   368
Volume/Cap:  0.30 xxxx  xxxx  0.16 xxxx  xxxx  0.42 0.11  0.07  3.49 xxxx  0.13
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        1.3 xxxx xxxxx   0.6 xxxx xxxxx   1.1 xxxx xxxxx   8.0 xxxx xxxxx
Stopped Del: 10.5 xxxx xxxxx  11.1 xxxx xxxxx 383.1 xxxx xxxxx  1584 xxxx xxxxx
LOS by Move:    B    *     *     B    *     *     F    *     *     F    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   200  xxxx xxxx   368
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   0.6 xxxxx xxxx   0.4
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  26.9 xxxxx xxxx  16.2
Shared LOS:     *    *     *     *    *     *     *    *     D     *    *     C
ApproachDel:     xxxxxx           xxxxxx             77.8            888.9
ApproachLOS:        *                *                 F                F
```



```
------------------------------------------------------------------------------
                         Raley's Landing Project
                  Cumulative Plus Project AM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
             Circular 212 Planning Method (Base Volume Alternative)
******************************************************************************
Intersection #5 3rd St/ Tower Bridge Gateway
******************************************************************************
Cycle (sec):        100                Critical Vol./Cap. (X):        1.061
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      180                Level Of Service:                  F
******************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Lanes:       2  0  2  0  1    2  0  1  1  0    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     111  465   981   295  286    76   179  796   162   982  688   488
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  111  465   981   295  286    76   179  796   162   982  688   488
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   111  465   981   295  286    76   179  796   162   982  688   488
Reduct Vol:     0    0   490     0    0     0     0    0    55     0    0   205
Reduced Vol:  111  465   491   295  286    76   179  796   107   982  688   283
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.10 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00
Final Vol.:   122  465   491   325  286    76   197  796   107  1080  688   283
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 2.00  1.00  2.00 1.58  0.42  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:  3000 3000  1500  3000 2370   630  3000 3000  1500  3000 3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.16  0.33  0.11 0.12  0.12  0.07 0.27  0.07  0.36 0.23  0.19
Crit Vol:                491   162                     398         540
Crit Moves:             ****  ****                    ****        ****
******************************************************************************
```

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-------------------------------------------------------------------------------
                        Raley's Landing Project
                  Cumulative Plus Project AM Peak Hour
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #6 5th St/ C St
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.683
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       72              Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     273  289   178    81  345    41    20  220   454   105  218   174
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  273  289   178    81  345    41    20  220   454   105  218   174
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   273  289   178    81  345    41    20  220   454   105  218   174
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  273  289   178    81  345    41    20  220   454   105  218   174
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   273  289   178    81  345    41    20  220   454   105  218   174
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.24  0.76  1.00 1.79  0.21  1.00 1.00  1.00  1.00 2.00  1.00
Final Sat.:  1500 1857  1143  1500 2681   319  1500 1500  1500  1500 3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.18 0.16  0.16  0.05 0.13  0.13  0.01 0.15  0.30  0.07 0.07  0.12
Crit Vol:     273                    193                   454   105
Crit Moves:  ****                   ****                  ****  ****
*******************************************************************************
```



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-------------------------------------------------------------------------------
                        Raley's Landing Project
                  Cumulative Plus Project AM Peak Hour
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #7 5th St/ F St
*******************************************************************************
Average Delay (sec/veh):    294.7   Worst Case Level Of Service:      F[1843.7]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0   0  1  0  1  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      62  524   101   192  511    13     5   63    71    67   72   123
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   62  524   101   192  511    13     5   63    71    67   72   123
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    62  524   101   192  511    13     5   63    71    67   72   123
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    62  524   101   192  511    13     5   63    71    67   72   123
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   7.5  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  529 xxxx xxxxx   629 xxxx xxxxx  1335 1660   271  1378 1616   324
Potent Cap.: 1048 xxxx xxxxx   963 xxxx xxxxx   114   99   733   106  105   678
Move Cap.:   1044 xxxx xxxxx   960 xxxx xxxxx    11   71   727    18   75   672
Volume/Cap:  0.06 xxxx  xxxx  0.20 xxxx  xxxx  0.47 0.89  0.10  3.63 0.96  0.18
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.2 xxxx xxxxx   0.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.7 xxxx xxxxx   9.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx   96 xxxxx  xxxx   55 xxxxx
SharedQueue:  0.2 xxxx xxxxx   0.7 xxxx xxxxx xxxxx 10.4 xxxxx xxxxx 29.2 xxxxx
Shrd StpDel:  8.7 xxxx xxxxx   9.7 xxxx xxxxx xxxxx  332 xxxxx xxxxx 1844 xxxxx
Shared LOS:     A    *     *     A    *     *     *    F     *     *    F     *
ApproachDel:     xxxxxx           xxxxxx            332.1           1843.7
ApproachLOS:        *                *                F                F
```

Raley's Landing Project
Cumulative Plus Project AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 5th St/ G St

Average Delay (sec/veh): 66.0 Worst Case Level Of Service: F[366.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0 1 0			0 1 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	11	647	27	29	646	1	1	2	34	252	2	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	647	27	29	646	1	1	2	34	252	2	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	647	27	29	646	1	1	2	34	252	2	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	647	27	29	646	1	1	2	34	252	2	51
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	651	xxxx	xxxxx	677	xxxx	xxxxx	1065	1408	331	1071	1395	350
Potent Cap.:	945	xxxx	xxxxx	924	xxxx	xxxxx	180	140	671	178	143	652
Move Cap.:	942	xxxx	xxxxx	922	xxxx	xxxxx	156	133	667	161	136	645
Volume/Cap:	0.01	xxxx	xxxx	0.03	xxxx	xxxx	0.01	0.02	0.05	1.57	0.01	0.08
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	8.9	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	511	xxxxx	xxxx	183	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	20.7	xxxxx
Shrd StpDel:	8.9	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	12.6	xxxxx	xxxxx	366	xxxxx
Shared LOS:	A	*	*	A	*	*	*	B	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			12.6			366.0		
ApproachLOS:	*			*			B			F		

Raley's Landing Project
Cumulative Plus Project AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 5th St/ West Capitol Ave

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[19.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 1 0 0			0 0 2 0 1			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	1	729	0	0	689	121	43	0	27	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	729	0	0	689	121	43	0	27	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	729	0	0	689	121	43	0	27	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	1	729	0	0	689	121	43	0	27	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	810	xxxx	xxxxx	xxxx	xxxx	xxxxx	1056	xxxx	345	xxxx	xxxx	xxxxx
Potent Cap.:	825	xxxx	xxxxx	xxxx	xxxx	xxxxx	224	xxxx	657	xxxx	xxxx	xxxxx
Move Cap.:	825	xxxx	xxxxx	xxxx	xxxx	xxxxx	224	xxxx	657	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.19	xxxx	0.04	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.7	xxxx	0.1	xxxxx	xxxx	xxxxx
Stopped Del:	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	24.9	xxxx	10.7	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	C	*	B	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			19.4			xxxxxx		
ApproachLOS:	*			*			C			*		

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                  Cumulative Plus Project AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #10 5th St/ Tower Bridge Gateway
*******************************************************************************
Cycle (sec):        100             Critical Vol./Cap. (X):        0.717
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       80             Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       3  469   322   241  343   237   204  546     4   239  548   131
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    3  469   322   241  343   237   204  546     4   239  548   131
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     3  469   322   241  343   237   204  546     4   239  548   131
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    3  469   322   241  343   237   204  546     4   239  548   131
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     3  469   322   241  343   237   204  546     4   239  548   131
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 3.00  1.00
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 3000  1500  1500 4500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.16  0.21  0.16 0.11  0.16  0.14 0.18  0.00  0.16 0.12  0.09
Crit Vol:                322   241                   273         239
Crit Moves:             ****  ****                  ****        ****
*******************************************************************************
```



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-------------------------------------------------------------------------------
                          Raley's Landing Project
                  Cumulative Plus Project AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #11 Jefferson/ West capitol Ave
*******************************************************************************
Cycle (sec):        100             Critical Vol./Cap. (X):        0.755
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       93             Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  2  1  0   1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      45  713    93   287  827   154   299  650   107    73  429   205
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   45  713    93   287  827   154   299  650   107    73  429   205
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    45  713    93   287  827   154   299  650   107    73  429   205
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0   205
Reduced Vol:   45  713    93   287  827   154   299  650   107    73  429     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    45  713    93   287  827   154   299  650   107    73  429     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.77  0.23  1.00 1.69  0.31  1.00 2.58  0.42  1.00 3.00  1.00
Final Sat.:  1500 2654   346  1500 2529   471  1500 3864   636  1500 4500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.27  0.27  0.19 0.33  0.33  0.20 0.17  0.17  0.05 0.10  0.00
Crit Vol:          403         287               299                     143
Crit Moves:       ****        ****              ****                    ****
*******************************************************************************
```

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--------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #12 Jefferson/ Sacramento Ave
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.777
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      102              Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include           Ignore          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  1  0  1   1  0  1  0  1   1  0  2  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     507  385   169   28  471   144  131  578   564  127  503    17
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  507  385   169   28  471   144  131  578   564  127  503    17
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00
PHF Volume:   507  385   169   28  471   144  131  578     0  127  503    17
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  507  385   169   28  471   144  131  578     0  127  503    17
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00
MLF Adj:     1.10 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00
Final Vol.:   558  385   169   28  471   144  131  578     0  127  503    17
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       2.00 1.00  1.00 1.00 1.00  1.00 1.00 2.00  1.00 1.00 1.93  0.07
Final Sat.:  3000 1500  1500 1500 1500  1500 1500 3000  1500 1500 2902    98
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.19 0.26  0.11 0.02 0.31  0.10 0.09 0.19  0.00 0.08 0.17  0.17
Crit Vol:     279                  471              289         127
Crit Moves:  ****                 ****             ****        ****
********************************************************************************
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--------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project AM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #13 Garden/W Capitol Ave
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.664
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       55              Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1! 0  0   0  0  0  0  0   0  0  1  0  2   1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     684    0     0    0    0     0    0   54   943    0  135     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  684    0     0    0    0     0    0   54   943    0  135     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   684    0     0    0    0     0    0   54   943    0  135     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  684    0     0    0    0     0    0   54   943    0  135     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.10 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.10 1.00 1.00  1.00
Final Vol.:   752    0     0    0    0     0    0   54  1037    0  135     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550 1550 1550  1550 1550 1550  1550 1550 1550  1550
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       2.00 0.00  0.00 0.00 0.00  0.00 0.00 1.00  2.00 1.00 1.00  0.00
Final Sat.:  3100    0     0    0    0     0    0 1550  3100 1550 1550     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.24 0.00  0.00 0.00 0.00  0.00 0.00 0.03  0.33 0.00 0.09  0.00
Crit Vol:     376                    0                   519       135
Crit Moves:  ****                                       ****      ****
********************************************************************************
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Raley's Landing Project
Cumulative Plus Project AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #14 South River Rd/ US 50 WB Rmp

Cycle (sec): 100 Critical Vol./Cap. (X): 0.844
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 146 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 1 0			1 0 1 1 0			2 0 1 0 1			2 0 0 1 0		
Volume Module:												
Base Vol:	84	830	152	146	684	46	798	313	584	81	28	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	830	152	146	684	46	798	313	584	81	28	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	830	152	146	684	46	798	313	584	81	28	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	830	152	146	684	46	798	313	584	81	28	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.00	1.00	1.10	1.00	1.00
Final Vol.:	84	830	152	146	684	46	878	313	584	89	28	48
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.69	0.31	1.00	1.87	0.13	2.00	1.00	1.00	2.00	0.37	0.63
Final Sat.:	1500	2536	464	1500	2811	189	3000	1500	1500	3000	553	947
Capacity Analysis Module:												
Vol/Sat:	0.06	0.33	0.33	0.10	0.24	0.24	0.29	0.21	0.39	0.03	0.05	0.05
Crit Vol:			491	146					584	45		
Crit Moves:			****	****					****	****		

Raley's Landing Project
Cumulative Plus Project AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #15 South River Rd/ US 50 On Ramp

Cycle (sec): 100 Critical Vol./Cap. (X): 0.524
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 39 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Ignore			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 0 1			1 0 2 0 1			0 0 0 0 0			1 0 1 0 1		
Volume Module:												
Base Vol:	345	804	4	3	797	203	0	0	0	3	5	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	345	804	4	3	797	203	0	0	0	3	5	3
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	345	804	0	3	797	203	0	0	0	3	5	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	804	0	3	797	203	0	0	0	3	5	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	345	804	0	3	797	203	0	0	0	3	5	0
Saturation Flow Module:												
Sat/Lane:	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	2.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Final Sat.:	1550	1550	1550	1550	3100	1550	0	0	0	1550	1550	1550
Capacity Analysis Module:												
Vol/Sat:	0.22	0.52	0.00	0.00	0.26	0.13	0.00	0.00	0.00	0.00	0.00	0.00
Crit Vol:		804		3			0				5	
Crit Moves:		****		****							****	

Raley's Landing Project
Cumulative Plus Project AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #16 Garden/ Tower Bridge Gateway

Cycle (sec): 100 Critical Vol./Cap. (X): 0.831
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 135 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	588	336	0	489	453	2	15	277	589	0	495	332
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	588	336	0	489	453	2	15	277	589	0	495	332
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	588	336	0	489	453	2	15	277	589	0	495	332
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	588	336	0	489	453	2	15	277	589	0	495	332
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	647	336	0	489	453	2	15	277	589	0	495	332
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	1500	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.22	0.11	0.00	0.33	0.15	0.00	0.01	0.09	0.39	0.00	0.17	0.22
Crit Vol:		168		489					589	0		
Crit Moves:		****		****					****	****		

Raley's Landing Project
Cumulative Plus Project AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Front St/ Capital Mall

Cycle (sec): 100 Critical Vol./Cap. (X): 0.850
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 124 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 0	1	0 0	0 0	1	0 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	0	0	20	0	0	198	0	2576	5	27	1742	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	20	0	0	198	0	2576	5	27	1742	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	20	0	0	198	0	2576	5	27	1742	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	20	0	0	198	0	2576	5	27	1742	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	20	0	0	198	0	2576	5	27	1742	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.87	1.00	1.00	0.87	1.00	0.95	0.95	0.95	0.95	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.99	0.01	1.00	2.00	1.00
Final Sat.:	0	0	1644	0	0	1644	0	3603	7	1805	3610	1900
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.01	0.00	0.00	0.12	0.00	0.71	0.71	0.01	0.48	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.14	0.00	0.00	0.14	0.00	0.84	0.84	0.02	0.86	0.00
Volume/Cap:	0.00	0.00	0.09	0.00	0.00	0.85	0.00	0.85	0.85	0.85	0.56	0.00
Delay/Veh:	0.0	0.0	37.5	0.0	0.0	66.4	0.0	6.9	6.9	148.1	2.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	37.5	0.0	0.0	66.4	0.0	6.9	6.9	148.1	2.2	0.0
HCM2kAvg:	0	0	1	0	0	9	0	25	25	2	8	0

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-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #18 3rd St/ Capital Mall
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        1.105
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):       61.7
Optimal Cycle:      180               Level Of Service:                 E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   1  0  2  1  0   0  0  2  1  0   1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  269  562   980    0 1208   419   75  987     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  269  562   980    0 1208   419   75  987     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  269  562   980    0 1208   419   75  987     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  269  562   980    0 1208   419   75  987     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0  269  562   980    0 1208   419   75  987     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.81 0.74  0.74 1.00 0.79  0.79 0.86 0.86  1.00
Lanes:       0.00 0.00  0.00 1.00 2.00  1.00 0.00 2.23  0.77 1.00 2.00  0.00
Final Sat.:    0    0     0 1548 2817  1408    0 3331  1155 1625 3249     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.17 0.20  0.70 0.00 0.36  0.36 0.05 0.30  0.00
Crit Moves:                             ****      ****        ****
Green/Cycle: 0.00 0.00  0.00 0.63 0.63  0.63 0.00 0.33  0.33 0.04 0.37  0.00
Volume/Cap:  0.00 0.00  0.00 0.28 0.32  1.10 0.00 1.10  1.10 1.10 0.82  0.00
Delay/Veh:    0.0  0.0   0.0  8.4  8.6  76.7  0.0 91.2  91.2 188.7 33.1   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  8.4  8.6  76.7  0.0 91.2  91.2 188.7 33.1   0.0
HCM2kAvg:      0    0     0    4    4    46    0   27    27    6   16     0
*******************************************************************************
```



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-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #19 3rd St/ J St
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        1.126
Loss Time (sec):     15 (Y+R =  4 sec) Average Delay (sec/veh):       94.2
Optimal Cycle:      180               Level Of Service:                 F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0   24     0    0   15     0
Lanes:        0  0  0  0  2   1  0  2  0  0   0  1  2  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    54   99  134     0   49 1789   542    9 1633   540
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0    54   99  134     0   49 1789   542    9 1633   540
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0    54   99  134     0   49 1789   542    9 1633   540
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0    54   99  134     0   49 1789   542    9 1633   540
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0    54   99  134     0   49 1789   542    9 1633   540
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  0.67 0.69 0.86  1.00 0.79 0.79  0.79 0.79 0.79  0.79
Lanes:       0.00 0.00  2.00 1.00 2.00  0.00 0.08 3.01  0.91 0.01 2.25  0.74
Final Sat.:    0    0  2558 1315 3249     0  124 4515  1368   19 3364  1113
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.02 0.08 0.04  0.00 0.40 0.40  0.40 0.49 0.49  0.49
Crit Moves:                  ****                 ****        ****
Green/Cycle: 0.00 0.00  0.07 0.07 0.07  0.00 0.35 0.35  0.35 0.43 0.43  0.43
Volume/Cap:  0.00 0.00  0.32 1.13 0.62  0.00 1.13 1.13  1.13 1.13 1.13  1.13
Delay/Veh:    0.0  0.0  45.5 180.6 50.7  0.0 95.8 95.8  95.8 92.4 92.4  92.4
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  45.5 180.6 50.7  0.0 95.8 95.8  95.8 92.4 92.4  92.4
HCM2kAvg:      0    0     1    9    3     0   30   30    30   36   36    36
*******************************************************************************
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--------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project AM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #20 3rd St/ P St
********************************************************************************
Cycle (sec):         50              Critical Vol./Cap. (X):        0.509
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):        11.5
Optimal Cycle:       34              Level Of Service:                 B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  1  1  1   0  0  0  0  0   0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  518   469    0    0     0  130  752     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0    0  518   469    0    0     0  130  752     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0    0  518   469    0    0     0  130  752     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  518   469    0    0     0  130  752     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0    0  518   469    0    0     0  130  752     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.79  0.79 1.00 1.00  1.00 0.82 0.82  1.00
Lanes:       0.00 0.00  0.00 0.00 1.57  1.43 0.00 0.00  0.00 0.44 2.56  0.00
Final Sat.:    0    0     0    0 2376  2151    0    0     0  688 3980     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.22  0.22 0.00 0.00  0.00 0.19 0.19  0.00
Crit Moves:                       ****                            ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.43  0.43 0.00 0.00  0.00 0.37 0.37  0.00
Volume/Cap:  0.00 0.00  0.00 0.00 0.51  0.51 0.00 0.00  0.00 0.51 0.51  0.00
Delay/Veh:    0.0  0.0   0.0  0.0 10.7  10.7  0.0  0.0   0.0 12.4 12.4   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0 10.7  10.7  0.0  0.0   0.0 12.4 12.4   0.0
HCM2kAvg:       0    0     0    0    4     4    0    0     0    4    4     0
********************************************************************************
```



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--------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project AM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #21 3rd St/ Q St
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.732
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):        19.1
Optimal Cycle:       59              Level Of Service:                 B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  1  2  0  0   0  0  3  1  0   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  373  262     0    0 2203   350    0    0     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  373  262     0    0 2203   350    0    0     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  373  262     0    0 2203   350    0    0     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  373  262     0    0 2203   350    0    0     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0  373  262     0    0 2203   350    0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.82 0.82  1.00 1.00 0.80  0.80 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.00 2.00  0.00 0.00 3.45  0.55 0.00 0.00  0.00
Final Sat.:    0    0     0 1556 3112     0    0 5258   835    0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.24 0.08  0.00 0.00 0.42  0.42 0.00 0.00  0.00
Crit Moves:                  ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.33 0.33  0.00 0.00 0.57  0.57 0.00 0.00  0.00
Volume/Cap:  0.00 0.00  0.00 0.73 0.26  0.00 0.00 0.73  0.73 0.00 0.00  0.00
Delay/Veh:    0.0  0.0   0.0 33.0 24.7   0.0  0.0 16.5  16.5  0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 33.0 24.7   0.0  0.0 16.5  16.5  0.0  0.0   0.0
HCM2kAvg:       0    0     0   12    3     0    0   16    16    0    0     0
********************************************************************************
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--------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project AM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #22 Jibboom St/ I St
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.972
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):       55.2
Optimal Cycle:     180              Level Of Service:                  E
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  1! 0  0   1  0  1  0  0   0  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  107    0   590  562  259     0    0  428     7
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  107    0   590  562  259     0    0  428     7
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  107    0   590  562  259     0    0  428     7
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  107    0   590  562  259     0    0  428     7
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0  107    0   590  562  259     0    0  428     7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.84 1.00  0.84 0.95 1.00  1.00 1.00 1.00  0.85
Lanes:       0.00 0.00  0.00 0.15 0.00  0.85 1.00 1.00  0.00 0.00 1.00  1.00
Final Sat.:    0    0     0  246    0  1357 1805 1900     0    0 1900  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.43 0.00  0.43 0.31 0.14  0.00 0.00 0.23  0.00
Crit Moves:                  ****             ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.45 0.00  0.45 0.32 0.55  0.00 0.00 0.23  0.23
Volume/Cap:  0.00 0.00  0.00 0.97 0.00  0.97 0.97 0.25  0.00 0.00 0.97  0.02
Delay/Veh:    0.0  0.0   0.0 53.6  0.0  53.6 63.7 11.7   0.0  0.0 73.5  29.7
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 53.6  0.0  53.6 63.7 11.7   0.0  0.0 73.5  29.7
HCM2kAvg:      0    0     0   28    0    28   24    4     0    0   18     0
********************************************************************************
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--------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project AM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #23 3rd St/ L St
********************************************************************************
Cycle (sec):        70              Critical Vol./Cap. (X):        0.852
Loss Time (sec):    10 (Y+R =  4 sec) Average Delay (sec/veh):       20.5
Optimal Cycle:      74              Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  2  1  0   0  0  0  0  0   1  1  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  749   523    0    0     0 1028   86    58
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0    0  749   523    0    0     0 1028   86    58
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0    0  749   523    0    0     0 1028   86    58
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  749   523    0    0     0 1028   86    58
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0    0  749   523    0    0     0 1028   86    58
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.77  0.77 1.00 1.00  1.00 0.73 0.73  0.77
Lanes:       0.00 0.00  0.00 0.00 2.00  1.00 0.00 0.00  0.00 2.00 1.00  1.00
Final Sat.:    0    0     0    0 2919  1460    0    0     0 2762 1381  1454
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.26  0.36 0.00 0.00  0.00 0.37 0.06  0.04
Crit Moves:                             ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.42  0.42 0.00 0.00  0.00 0.44 0.44  0.44
Volume/Cap:  0.00 0.00  0.00 0.00 0.61  0.85 0.00 0.00  0.00 0.85 0.14  0.09
Delay/Veh:    0.0  0.0   0.0  0.0 16.4  23.3  0.0  0.0   0.0 23.3 11.8  11.6
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0 16.4  23.3  0.0  0.0   0.0 23.3 11.8  11.6
HCM2kAvg:      0    0     0    0    7    13    0    0     0   15    1     1
********************************************************************************
```

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #27 3rd St/ E St
*******************************************************************************
Average Delay (sec/veh):    131.4   Worst Case Level Of Service:       F[918.6]
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      52  255   339   179  320    25    25   89    52    88   34    59
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   52  255   339   179  320    25    25   89    52    88   34    59
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    52  255   339   179  320    25    25   89    52    88   34    59
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    52  255   339   179  320    25    25   89    52    88   34    59
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  345 xxxx xxxxx   594 xxxx xxxxx  1266 1389   333  1290 1232   425
Potent Cap.: 1225 xxxx xxxxx   992 xxxx xxxxx   147  144   714   142  179   634
Move Cap.:   1225 xxxx xxxxx   992 xxxx xxxxx    89  110   714    37  137   634
Volume/Cap:  0.04 xxxx  xxxx  0.18 xxxx  xxxx  0.28 0.81  0.07  2.39 0.25  0.09
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.1 xxxx xxxxx   9.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  143 xxxxx  xxxx   66 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.5 xxxxx xxxxx 18.1 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  186 xxxxx xxxxx  919 xxxxx
Shared LOS:     *    *     *     *    *     *     *    F     *     *    F     *
ApproachDel:      xxxxxx           xxxxxx            186.3            918.6
ApproachLOS:         *                *                F                F
```

Intersection Capacity Analysis

Cumulative Plus Project

PM Peak Hour Scenario

Raley's Landing Project
Cumulative Plus Project PM Peak Hour

Scenario Report

Scenario:	CumPProj Pm
Command:	CumPProj PM
Volume:	CumPProj Pm
Geometry:	CumPProj PM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Cumulative Plus Project PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 1 3rd St/ C St	C	xxxxx	0.745	C	xxxxx	0.745	+ 0.000 V/C
# 2 3rd St/ F St	D	xxxxx	0.855	D	xxxxx	0.855	+ 0.000 V/C
# 3 3rd St/ G St	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 5 3rd St/ Tower Bridge Gateway	F	xxxxx	1.163	F	xxxxx	1.163	+ 0.000 V/C
# 6 5th St/ C St	C	xxxxx	0.735	C	xxxxx	0.735	+ 0.000 V/C
# 7 5th St/ F St	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 8 5th St/ G St	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 9 5th St/ West Capitol Ave	D	34.8	0.000	D	34.8	0.000	+ 0.000 D/V
# 10 5th St/ Tower Bridge Gateway	D	xxxxx	0.814	D	xxxxx	0.814	+ 0.000 V/C
# 11 Jefferson/ West capitol Ave	D	xxxxx	0.861	D	xxxxx	0.861	+ 0.000 V/C
# 12 Jefferson/ Sacramento Ave	C	xxxxx	0.761	C	xxxxx	0.761	+ 0.000 V/C
# 13 Garden/W Capitol Ave	C	xxxxx	0.786	C	xxxxx	0.786	+ 0.000 V/C
# 14 South River Rd/ US 50 WB Rmp	D	xxxxx	0.888	D	xxxxx	0.888	+ 0.000 V/C
# 15 South River Rd/ US 50 On Ramp	A	xxxxx	0.552	A	xxxxx	0.552	+ 0.000 V/C
# 16 Garden/ Tower Bridge Gateway	D	xxxxx	0.857	D	xxxxx	0.857	+ 0.000 V/C
# 17 Front St/ Capital Mall	A	8.0	0.780	A	8.0	0.780	+ 0.000 D/V
# 18 3rd St/ Capital Mall	D	38.8	1.073	D	38.8	1.073	+ 0.000 D/V
# 19 3rd St/ J St	C	29.7	0.734	C	29.7	0.734	+ 0.000 D/V
# 20 3rd St/ P St	E	57.4	1.069	E	57.4	1.069	+ 0.000 D/V
# 21 3rd St/ Q St	C	21.3	0.594	C	21.3	0.594	+ 0.000 D/V
# 22 Jibboom St/ I St	E	78.8	1.076	E	78.8	1.076	+ 0.000 D/V
# 23 3rd St/ L St	C	25.4	0.955	C	25.4	0.955	+ 0.000 D/V
# 27 3rd St/ E St	F	755.9	0.000	F	755.9	0.000	+ 0.000 D/V

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 3rd St/ C St
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.745
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       73               Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  0  1   0  1  0  0  1   1  0  0  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      37   37   532    61   32     9     4  539    22   378  466    82
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   37   37   532    61   32     9     4  539    22   378  466    82
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    37   37   532    61   32     9     4  539    22   378  466    82
Reduct Vol:     0    0   378     0    0     0     0    0     0     0    0     0
Reduced Vol:   37   37   154    61   32     9     4  539    22   378  466    82
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    37   37   154    61   32     9     4  539    22   378  466    82
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.50 0.50  1.00  0.66 0.34  1.00  1.00 0.96  0.04  1.00 1.70  0.30
Final Sat.:   775  775  1550  1017  533  1550  1550 1489    61  1550 2636   464
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.05  0.10  0.06 0.06  0.01  0.00 0.36  0.36  0.24 0.18  0.18
Crit Vol:                154    61                          561   378
Crit Moves:             ****  ****                         ****  ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #2 3rd St/ F St
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.855
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      158               Level Of Service:                  D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     305  392    96    24  534   128   156   22   122   172   41    72
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  305  392    96    24  534   128   156   22   122   172   41    72
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   305  392    96    24  534   128   156   22   122   172   41    72
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  305  392    96    24  534   128   156   22   122   172   41    72
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   305  392    96    24  534   128   156   22   122   172   41    72
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.80  0.20  1.00 0.81  0.19  1.00 0.15  0.85  1.00 0.36  0.64
Final Sat.:  1500 1205   295  1500 1210   290  1500  229  1271  1500  544   956
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.33  0.33  0.02 0.44  0.44  0.10 0.10  0.10  0.11 0.08  0.08
Crit Vol:     305                     662                   144   172
Crit Moves:  ****                    ****                  ****  ****
*******************************************************************************
```

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                  Cumulative Plus Project PM Peak Hour
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
         2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #3 3rd St/ G St
*******************************************************************************
Average Delay (sec/veh):    801.5   Worst Case Level Of Service:      F[7759.3]
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  1  0  1    0  0  1! 0  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     511  781    96    51  843     6     9    0    33   147    1   115
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  511  781    96    51  843     6     9    0    33   147    1   115
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   511  781    96    51  843     6     9    0    33   147    1   115
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:   511  781    96    51  843     6     9    0    33   147    1   115
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1 xxxx   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5 xxxx   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  862 xxxx xxxxx   877 xxxx xxxxx  2877 xxxx   864  2773 2767   788
Potent Cap.:  789 xxxx xxxxx   779 xxxx xxxxx    11 xxxx   357    13   20   394
Move Cap.:    780 xxxx xxxxx   779 xxxx xxxxx     3 xxxx   351     5    6   392
Volume/Cap:  0.66 xxxx  xxxx  0.07 xxxx  xxxx  3.04 xxxx  0.09 28.69 0.16  0.29
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        5.0 xxxx xxxxx   0.2 xxxx xxxxx   2.3 xxxx xxxxx  20.4 xxxx xxxxx
Stopped Del: 17.9 xxxx xxxxx   9.9 xxxx xxxxx  3049 xxxx xxxxx 13858 xxxx xxxxx
LOS by Move:    C    *     *     A    *     *     F    *     *     F    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   351  xxxx xxxx   256
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   0.3 xxxxx xxxx   2.2
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  16.3 xxxxx xxxx  30.2
Shared LOS:     *    *     *     *    *     *     *    *     C     *    *     D
ApproachDel:     xxxxxx           xxxxxx            666.2            7759.3
ApproachLOS:        *                *                F                F
```



```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                  Cumulative Plus Project PM Peak Hour
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 3rd St/ Tower Bridge Gateway
*******************************************************************************
Cycle (sec):        100                Critical Vol./Cap. (X):        1.163
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      180                Level Of Service:                  F
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        2  0  2  0  1    2  0  1  1  0    2  0  2  0  1    2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     234  380  1067   365  404   146   216  847   172  1068  697   492
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  234  380  1067   365  404   146   216  847   172  1068  697   492
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   234  380  1067   365  404   146   216  847   172  1068  697   492
Reduct Vol:     0    0   534     0    0     0     0    0   114     0    0   258
Reduced Vol:  234  380   533   365  404   146   216  847    58  1068  697   234
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.10 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00
Final Vol.:   257  380   533   402  404   146   238  847    58  1175  697   234
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 2.00  1.00  2.00 1.47  0.53  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:  3000 3000  1500  3000 2204   796  3000 3000  1500  3000 3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.13  0.36  0.13 0.18  0.18  0.08 0.28  0.04  0.39 0.23  0.16
Crit Vol:               533   201                    424         587
Crit Moves:            ****  ****                   ****        ****
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #6 5th St/ C St
********************************************************************************
Cycle (sec):        100             Critical Vol./Cap. (X):        0.735
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       86             Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    395  374   134   121  399    20    37  340   382   116  429    55
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse: 395  374   134   121  399    20    37  340   382   116  429    55
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:  395  374   134   121  399    20    37  340   382   116  429    55
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 395  374   134   121  399    20    37  340   382   116  429    55
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:  395  374   134   121  399    20    37  340   382   116  429    55
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.47  0.53  1.00 1.90  0.10  1.00 1.00  1.00  1.00 2.00  1.00
Final Sat.:  1500 2209   791  1500 2857   143  1500 1500  1500  1500 3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.26 0.17  0.17  0.08 0.14  0.14  0.02 0.23  0.25  0.08 0.14  0.04
Crit Vol:     395                           210               382   116
Crit Moves:  ****                          ****              ****  ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #7 5th St/ F St
********************************************************************************
Average Delay (sec/veh):    294.1   Worst Case Level Of Service:      F[1243.7]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  1  0   0  1  0  1  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     38  527   132    99  628     6    13   51   115   142   85   229
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  38  527   132    99  628     6    13   51   115   142   85   229
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   38  527   132    99  628     6    13   51   115   142   85   229
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:   38  527   132    99  628     6    13   51   115   142   85   229
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   7.5  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  639 xxxx xxxxx   663 xxxx xxxxx  1223 1573   326  1214 1510   341
Potent Cap.:  955 xxxx xxxxx   935 xxxx xxxxx   138  111   676   140  122   661
Move Cap.:    951 xxxx xxxxx   932 xxxx xxxxx    24   94   671    59  102   655
Volume/Cap:  0.04 xxxx  xxxx  0.11 xxxx  xxxx  0.53 0.54  0.17  2.42 0.83  0.35
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.9 xxxx xxxxx   9.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  143 xxxxx  xxxx  127 xxxxx
SharedQueue:  0.1 xxxx xxxxx   0.4 xxxx xxxxx xxxxx 10.7 xxxxx xxxxx 45.0 xxxxx
Shrd StpDel:  8.9 xxxx xxxxx   9.3 xxxx xxxxx xxxxx  218 xxxxx xxxxx 1244 xxxxx
Shared LOS:     A    *     *     A    *     *     *    F     *     *    F     *
ApproachDel:     xxxxxx           xxxxxx            217.9            1243.7
ApproachLOS:        *                *                F                 F
```

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                    Cumulative Plus Project PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #8 5th St/ G St
********************************************************************************
Average Delay (sec/veh):     215.5   Worst Case Level Of Service:      F[1195.3]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        0  1  0  1  0   0  1  0  1  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      25  682    78    55  830     2     2    2    50   334    3    41
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   25  682    78    55  830     2     2    2    50   334    3    41
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    25  682    78    55  830     2     2    2    50   334    3    41
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    25  682    78    55  830     2     2    2    50   334    3    41
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.5  6.5   6.9   7.5  6.5   6.9
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  836 xxxx xxxxx   763 xxxx xxxxx  1348 1758   423  1303 1720   393
Potent Cap.:  807 xxxx xxxxx   859 xxxx xxxxx   111   86   585   120   90   612
Move Cap.:    804 xxxx xxxxx   856 xxxx xxxxx    92   77   582    99   81   605
Volume/Cap:  0.03 xxxx  xxxx  0.06 xxxx  xxxx  0.02 0.03  0.09  3.37 0.04  0.07
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  9.6 xxxx xxxxx   9.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  404 xxxxx  xxxx  109 xxxxx
SharedQueue:  0.1 xxxx xxxxx   0.2 xxxx xxxxx xxxxx  0.5 xxxxx xxxxx 37.4 xxxxx
Shrd StpDel:  9.6 xxxx xxxxx   9.5 xxxx xxxxx xxxxx 15.3 xxxxx xxxxx 1195 xxxxx
Shared LOS:     A    *     *     A    *     *     *    C     *     *    F     *
ApproachDel:      xxxxxx           xxxxxx            15.3            1195.3
ApproachLOS:        *                *                C                F
```



```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                    Cumulative Plus Project PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #9 5th St/ West Capitol Ave
********************************************************************************
Average Delay (sec/veh):       1.5   Worst Case Level Of Service:      D[ 34.8]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        0  1  1  0  0   0  0  2  0  1   1  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1  800     0     0 1007   192    53    0    35     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    1  800     0     0 1007   192    53    0    35     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     1  800     0     0 1007   192    53    0    35     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     1  800     0     0 1007   192    53    0    35     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.8 xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1199 xxxx xxxxx  xxxx xxxx xxxxx  1409 xxxx   504  xxxx xxxx xxxxx
Potent Cap.:  589 xxxx xxxxx  xxxx xxxx xxxxx   132 xxxx   519  xxxx xxxx xxxxx
Move Cap.:    589 xxxx xxxxx  xxxx xxxx xxxxx   132 xxxx   519  xxxx xxxx xxxxx
Volume/Cap:  0.00 xxxx  xxxx  xxxx xxxx  xxxx  0.40 xxxx  0.07  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx xxxxx xxxx xxxxx   1.7 xxxx   0.2 xxxxx xxxx xxxxx
Stopped Del: 11.1 xxxx xxxxx xxxxx xxxx xxxxx  49.6 xxxx  12.4 xxxxx xxxx xxxxx
LOS by Move:    B    *     *     *    *     *     E    *     B     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel: 11.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     B    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      xxxxxx           xxxxxx            34.8            xxxxxx
ApproachLOS:        *                *                D                *
```

```
---------------------------------------------------------------------------------
                         Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
---------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
*********************************************************************************
Intersection #10 5th St/ Tower Bridge Gateway
*********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):         0.814
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      123              Level Of Service:                   D
*********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      13  609   330   350  380   386   217  515     4   284  795    58
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   13  609   330   350  380   386   217  515     4   284  795    58
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    13  609   330   350  380   386   217  515     4   284  795    58
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   13  609   330   350  380   386   217  515     4   284  795    58
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    13  609   330   350  380   386   217  515     4   284  795    58
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 3.00  1.00
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 3000  1500  1500 4500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.20  0.22  0.23 0.13  0.26  0.14 0.17  0.00  0.19 0.18  0.04
Crit Vol:                330   350                    258         284
Crit Moves:             ****  ****                   ****        ****
*********************************************************************************
```



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---------------------------------------------------------------------------------
                         Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
---------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
*********************************************************************************
Intersection #11 Jefferson/ West capitol Ave
*********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):         0.861
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      164              Level Of Service:                   D
*********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  2  1  0   1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     129  697   135   268  927   241   317  703   173   286  783   321
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  129  697   135   268  927   241   317  703   173   286  783   321
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   129  697   135   268  927   241   317  703   173   286  783   321
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0   268
Reduced Vol:  129  697   135   268  927   241   317  703   173   286  783    53
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   129  697   135   268  927   241   317  703   173   286  783    53
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.68  0.32  1.00 1.59  0.41  1.00 2.41  0.59  1.00 3.00  1.00
Final Sat.:  1500 2513   487  1500 2381   619  1500 3611   889  1500 4500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.28  0.28  0.18 0.39  0.39  0.21 0.19  0.19  0.19 0.17  0.04
Crit Vol:     129                     584                    292   286
Crit Moves:  ****                    ****                   ****  ****
*********************************************************************************
```

```
--------------------------------------------------------------------------------
                           Raley's Landing Project
                    Cumulative Plus Project PM Peak Hour
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #12 Jefferson/ Sacramento Ave
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.761
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      95              Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Ignore           Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       2  0  1  0  1   1  0  1  0  1   1  0  2  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     380  511   237    26  374   146   212  606   689   255  464    40
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  380  511   237    26  374   146   212  606   689   255  464    40
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Volume:   380  511   237    26  374   146   212  606     0   255  464    40
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  380  511   237    26  374   146   212  606     0   255  464    40
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
MLF Adj:     1.10 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
Final Vol.:   418  511   237    26  374   146   212  606     0   255  464    40
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 1.00  1.00  1.00 1.00  1.00  1.00 2.00  1.00  1.00 1.84  0.16
Final Sat.:  3000 1500  1500  1500 1500  1500  1500 3000  1500  1500 2762   238
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.34  0.16  0.02 0.25  0.10  0.14 0.20  0.00  0.17 0.17  0.17
Crit Vol:     209               374              303         255
Crit Moves:  ****              ****             ****        ****
********************************************************************************
```



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--------------------------------------------------------------------------------
                           Raley's Landing Project
                    Cumulative Plus Project PM Peak Hour
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #13 Garden/W Capitol Ave
********************************************************************************
Cycle (sec):       100              Critical Vol./Cap. (X):        0.786
Loss Time (sec):     0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      87              Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  1! 0  0   0  0  0  0  0   0  0  1  0  2   1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    1050    0     0     0    0     0     0   57   895     0  149     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse: 1050    0     0     0    0     0     0   57   895     0  149     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:  1050    0     0     0    0     0     0   57   895     0  149     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 1050    0     0     0    0     0     0   57   895     0  149     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.10 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.10  1.00 1.00  1.00
Final Vol.:  1155    0     0     0    0     0     0   57   985     0  149     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 0.00  0.00  0.00 0.00  0.00  0.00 1.00  2.00  1.00 1.00  0.00
Final Sat.:  3100    0     0     0    0     0     0 1550  3100  1550 1550     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.37 0.00  0.00  0.00 0.00  0.00  0.00 0.04  0.32  0.00 0.10  0.00
Crit Vol:     578                    0                     492         149
Crit Moves:  ****                                         ****        ****
********************************************************************************
```

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #14 South River Rd/ US 50 WB Rmp
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.888
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      180               Level Of Service:                 D
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   2  0  1  0  1   2  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      88  836    49   215  921    13   694   88   494   328   33    55
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   88  836    49   215  921    13   694   88   494   328   33    55
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    88  836    49   215  921    13   694   88   494   328   33    55
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   88  836    49   215  921    13   694   88   494   328   33    55
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00
Final Vol.:    88  836    49   215  921    13   763   88   494   361   33    55
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.89  0.11  1.00 1.97  0.03  2.00 1.00  1.00  2.00 0.38  0.62
Final Sat.:  1500 2834   166  1500 2958    42  3000 1500  1500  3000  563   938
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.29  0.30  0.14 0.31  0.31  0.25 0.06  0.33  0.12 0.06  0.06
Crit Vol:                443   215                         494   180
Crit Moves:             ****  ****                        ****  ****
*******************************************************************************
```



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-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #15 South River Rd/ US 50 On Ramp
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.552
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       42               Level Of Service:                 A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:           Ignore           Include          Include           Ignore
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  2  0  1   0  0  0  0  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     336  673     0     1 1008   520     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  336  673     0     1 1008   520     0    0     0     0    0     0
User Adj:    1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Volume:   336  673     0     1 1008   520     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  336  673     0     1 1008   520     0    0     0     0    0     0
PCE Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:   336  673     0     1 1008   520     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1550 1550  1550  1550 1550  1550  1550 1550  1550  1550 1550  1550
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 2.00  1.00  0.00 0.00  0.00  1.00 1.00  1.00
Final Sat.:  1550 1550  1550  1550 3100  1550     0    0     0  1550 1550  1550
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.22 0.43  0.00  0.00 0.33  0.34  0.00 0.00  0.00  0.00 0.00  0.00
Crit Vol:     336                          520     0                     0
Crit Moves:  ****                         ****
*******************************************************************************
```

Raley's Landing Project
Cumulative Plus Project PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #16 Garden/ Tower Bridge Gateway

Cycle (sec): 100 Critical Vol./Cap. (X): 0.857
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 159 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2 0 1			1 0 2 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	1001	554	0	415	480	0	3	231	476	0	853	492
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1001	554	0	415	480	0	3	231	476	0	853	492
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1001	554	0	415	480	0	3	231	476	0	853	492
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1001	554	0	415	480	0	3	231	476	0	853	492
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	1101	554	0	415	480	0	3	231	476	0	853	492
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3000	1500	1500	3000	1500	1500	3000	1500	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.37	0.18	0.00	0.28	0.16	0.00	0.00	0.08	0.32	0.00	0.28	0.33
Crit Vol:	551				240		3					492
Crit Moves:	****				****		****					****

Raley's Landing Project
Cumulative Plus Project PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Front St/ Capital Mall

Cycle (sec): 100 Critical Vol./Cap. (X): 0.780
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 8.0
Optimal Cycle: 84 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0 0 1			0 0 0 0 1			0 0 1 1 0			1 0 2 0 1		
Volume Module:												
Base Vol:	0	0	1	0	0	216	0	2276	8	27	1849	239
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	1	0	0	216	0	2276	8	27	1849	239
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	1	0	0	216	0	2276	8	27	1849	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	1	0	0	216	0	2276	8	27	1849	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	1	0	0	216	0	2276	8	27	1849	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.87	1.00	1.00	0.87	1.00	0.95	0.95	0.95	0.95	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.99	0.01	1.00	2.00	1.00
Final Sat.:	0	0	1644	0	0	1644	0	3594	13	1805	3610	1900
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.63	0.63	0.01	0.51	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.17	0.00	0.00	0.17	0.00	0.81	0.81	0.02	0.83	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.78	0.78	0.78	0.62	0.00
Delay/Veh:	0.0	0.0	34.6	0.0	0.0	53.0	0.0	6.2	6.2	119.0	3.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	34.6	0.0	0.0	53.0	0.0	6.2	6.2	119.0	3.3	0.0
HCM2kAvg:	0	0	0	0	0	8	0	20	20	2	10	0

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--------------------------------------------------------------------------------
                           Raley's Landing Project
                    Cumulative Plus Project PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #18 3rd St/ Capital Mall
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        1.073
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      38.8
Optimal Cycle:      180              Level Of Service:                  D
********************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:       0  0  0  0  0   1  0  2  1  0   0  0  2  1  0   1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0   83 1321   839    0  863   696   35 1174     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0   83 1321   839    0  863   696   35 1174     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0   83 1321   839    0  863   696   35 1174     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0   83 1321   839    0  863   696   35 1174     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0   83 1321   839    0  863   696   35 1174     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.85 0.77  0.77 1.00 0.76  0.76 0.86 0.86  1.00
Lanes:       0.00 0.00  0.00 1.00 2.00  1.00 0.00 2.00  1.00 1.00 2.00  0.00
Final Sat.:    0    0     0 1611 2932  1466    0 2904  1452 1625 3249     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.05 0.45  0.57 0.00 0.30  0.48 0.02 0.36  0.00
Crit Moves:                             ****                ****  ****
Green/Cycle: 0.00 0.00  0.00 0.53 0.53  0.53 0.00 0.45  0.45 0.02 0.47  0.00
Volume/Cap:  0.00 0.00  0.00 0.10 0.84  1.07 0.00 0.67  1.07 1.07 0.77  0.00
Delay/Veh:    0.0  0.0   0.0 11.5 22.6  66.4  0.0 22.5  73.7 229.6 24.8  0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 11.5 22.6  66.4  0.0 22.5  73.7 229.6 24.8  0.0
HCM2kAvg:       0    0     0    1   20    38    0   11    32    3   17     0
********************************************************************************
```



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--------------------------------------------------------------------------------
                           Raley's Landing Project
                    Cumulative Plus Project PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #19 3rd St/ J St
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.734
Loss Time (sec):     15 (Y+R =  4 sec) Average Delay (sec/veh):      29.7
Optimal Cycle:       72              Level Of Service:                  C
********************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0   24     0    0   15     0
Lanes:       0  0  0  1  1   1  0  2  0  0   0  1  2  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    3   163  159  344     0  115 1193   513    6  569   140
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    3   163  159  344     0  115 1193   513    6  569   140
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    3   163  159  344     0  115 1193   513    6  569   140
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    3   163  159  344     0  115 1193   513    6  569   140
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    3   163  159  344     0  115 1193   513    6  569   140
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 0.77  0.77 0.69 0.86  1.00 0.78 0.78  0.78 0.80 0.80  0.80
Lanes:       0.00 0.04  1.96 1.00 2.00  0.00 0.26 2.74  1.00 0.02 2.39  0.59
Final Sat.:    0   53  2865 1312 3249     0  392 4067  1486   38 3607   888
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.06  0.06 0.12 0.11  0.00 0.29 0.29  0.35 0.16 0.16  0.16
Crit Moves:                  ****                           ****  ****
Green/Cycle: 0.00 0.17  0.17 0.17 0.17  0.00 0.47 0.47  0.47 0.21 0.21  0.21
Volume/Cap:  0.00 0.34  0.34 0.73 0.64  0.00 0.62 0.62  0.73 0.73 0.73  0.73
Delay/Veh:    0.0 37.4  37.4 51.9 41.6   0.0 20.3 20.3  22.6 39.5 39.5  39.5
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0 37.4  37.4 51.9 41.6   0.0 20.3 20.3  22.6 39.5 39.5  39.5
HCM2kAvg:       0    3     3    8    6     0   11   11    14    8    8     8
********************************************************************************
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------------------------------------------------------------------------------
                        Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #20 3rd St/ P St
******************************************************************************
Cycle (sec):         50               Critical Vol./Cap. (X):        1.069
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):       57.4
Optimal Cycle:      138               Level Of Service:                  E
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  0  0  0   0  0  1  1  1   0  0  0  0  0   0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    0    0  859  964    0    0    0  130 1968    0
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:   0    0    0    0  859  964    0    0    0  130 1968    0
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    0    0    0    0  859  964    0    0    0  130 1968    0
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   0    0    0    0  859  964    0    0    0  130 1968    0
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:    0    0    0    0  859  964    0    0    0  130 1968    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  1.00 1.00 1.00 1.00 0.79 0.79 1.00 1.00 1.00 0.82 0.82 1.00
Lanes:       0.00 0.00 0.00 0.00 1.41 1.59 0.00 0.00 0.00 0.19 2.81 0.00
Final Sat.:    0    0    0    0 2115 2374    0    0    0  289 4379    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00 0.00 0.41 0.41 0.00 0.00 0.00 0.45 0.45 0.00
Crit Moves:                       ****                             ****
Green/Cycle: 0.00 0.00 0.00 0.00 0.38 0.38 0.00 0.00 0.00 0.42 0.42 0.00
Volume/Cap:  0.00 0.00 0.00 0.00 1.07 1.07 0.00 0.00 0.00 1.07 1.07 0.00
Delay/Veh:    0.0  0.0  0.0  0.0 58.6 58.6  0.0  0.0  0.0 56.3 56.3  0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:   0.0  0.0  0.0  0.0 58.6 58.6  0.0  0.0  0.0 56.3 56.3  0.0
HCM2kAvg:      0    0    0    0   20   20    0    0    0   22   22    0
******************************************************************************
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------------------------------------------------------------------------------
                        Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #21 3rd St/ Q St
******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.594
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):       21.3
Optimal Cycle:       43               Level Of Service:                  C
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  0  0  0   0  1  2  0  0   0  0  3  1  0   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    0  541  458    0    0  921  211    0    0    0
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:   0    0    0  541  458    0    0  921  211    0    0    0
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    0    0    0  541  458    0    0  921  211    0    0    0
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   0    0    0  541  458    0    0  921  211    0    0    0
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:    0    0    0  541  458    0    0  921  211    0    0    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  1.00 1.00 1.00 0.82 0.82 1.00 1.00 0.80 0.80 1.00 1.00 1.00
Lanes:       0.00 0.00 0.00 1.00 2.00 0.00 0.00 3.25 0.75 0.00 0.00 0.00
Final Sat.:    0    0    0 1556 3112    0    0 4922 1128    0    0    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00 0.35 0.15 0.00 0.00 0.19 0.19 0.00 0.00 0.00
Crit Moves:                  ****                  ****
Green/Cycle: 0.00 0.00 0.00 0.59 0.59 0.00 0.00 0.31 0.31 0.00 0.00 0.00
Volume/Cap:  0.00 0.00 0.00 0.59 0.25 0.00 0.00 0.59 0.59 0.00 0.00 0.00
Delay/Veh:    0.0  0.0  0.0 13.8 10.1  0.0  0.0 29.4 29.4  0.0  0.0  0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:   0.0  0.0  0.0 13.8 10.1  0.0  0.0 29.4 29.4  0.0  0.0  0.0
HCM2kAvg:      0    0    0   11    3    0    0    8    8    0    0    0
******************************************************************************
```

```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #22 Jibboom St/ I St
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        1.076
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):       78.8
Optimal Cycle:      180              Level Of Service:                 E
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  1! 0  0   1  0  1  0  0   0  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0   17    0   552  936  285     0    0  400    12
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0   17    0   552  936  285     0    0  400    12
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0   17    0   552  936  285     0    0  400    12
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0   17    0   552  936  285     0    0  400    12
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0   17    0   552  936  285     0    0  400    12
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.86 1.00  0.86 0.95 1.00  1.00 1.00 1.00  0.85
Lanes:       0.00 0.00  0.00 0.03 0.00  0.97 1.00 1.00  0.00 0.00 1.00  1.00
Final Sat.:    0    0     0   49    0  1592 1805 1900     0    0 1900  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.35 0.00  0.35 0.52 0.15  0.00 0.00 0.21  0.01
Crit Moves:                  ****            ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.32 0.00  0.32 0.48 0.68  0.00 0.00 0.20  0.20
Volume/Cap:  0.00 0.00  0.00 1.08 0.00  1.08 1.08 0.22  0.00 0.00 1.08  0.04
Delay/Veh:    0.0  0.0   0.0 95.0  0.0  95.0 78.9  6.2   0.0  0.0  109  32.6
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 95.0  0.0  95.0 78.9  6.2   0.0  0.0  109  32.6
HCM2kAvg:      0    0     0   27    0    27   44    3     0    0   20     0
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                          Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #23 3rd St/ L St
*******************************************************************************
Cycle (sec):         70              Critical Vol./Cap. (X):        0.955
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):       25.4
Optimal Cycle:      110              Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  2  1  0   0  0  0  0  0   1  1  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0    0  600   395    0    0     0 1388  883   161
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0    0  600   395    0    0     0 1388  883   161
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0    0  600   395    0    0     0 1388  883   161
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0    0  600   395    0    0     0 1388  883   161
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0    0  600   395    0    0     0 1388  883   161
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 1.00 0.77  0.77 1.00 1.00  1.00 0.73 0.73  0.77
Lanes:       0.00 0.00  0.00 0.00 2.00  1.00 0.00 0.00  0.00 1.83 1.17  1.00
Final Sat.:    0    0     0    0 2925  1463    0    0     0 2532 1611  1454
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.00 0.21  0.27 0.00 0.00  0.00 0.55 0.55  0.11
Crit Moves:                             ****                       ****
Green/Cycle: 0.00 0.00  0.00 0.00 0.28  0.28 0.00 0.00  0.00 0.57 0.57  0.57
Volume/Cap:  0.00 0.00  0.00 0.00 0.73  0.95 0.00 0.00  0.00 0.95 0.95  0.19
Delay/Veh:    0.0  0.0   0.0  0.0 24.6  42.6  0.0  0.0   0.0 24.0 24.0   7.2
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  0.0 24.6  42.6  0.0  0.0   0.0 24.0 24.0   7.2
HCM2kAvg:      0    0     0    0    8    13    0    0     0   25   25     2
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                         Raley's Landing Project
                   Cumulative Plus Project PM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #27 3rd St/ E St
********************************************************************************
Average Delay (sec/veh):    238.4   Worst Case Level Of Service:      F[755.9]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  1  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      48  460   112    45  359    10    25   20    47   310   61   140
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   48  460   112    45  359    10    25   20    47   310   61   140
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    48  460   112    45  359    10    25   20    47   310   61   140
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    48  460   112    45  359    10    25   20    47   310   61   140
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  369 xxxx xxxxx   572 xxxx xxxxx  1167 1122   364  1100 1071   516
Potent Cap.: 1201 xxxx xxxxx  1011 xxxx xxxxx   172  208   685   191  223   563
Move Cap.:   1201 xxxx xxxxx  1011 xxxx xxxxx    93  190   685   154  204   563
Volume/Cap:  0.04 xxxx  xxxx  0.04 xxxx  xxxx  0.27 0.11  0.07  2.02 0.30  0.25
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.1 xxxx xxxxx   8.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:   A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  209 xxxxx  xxxx  199 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  2.1 xxxxx xxxxx 43.4 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 35.2 xxxxx xxxxx  756 xxxxx
Shared LOS:     *    *     *     *    *     *     *    E     *     *    F     *
ApproachDel:     xxxxxx           xxxxxx             35.2             755.9
ApproachLOS:        *                *                E                 F
```

Intersection Capacity Analysis

Existing Plus Project Mitigations

AM Peak Hour Scenario

Raley's Landing Project
Existing Plus Project Mitigation AM Peak Hour

Scenario Report

Scenario:	Existing Plus Project Am
Command:	Existing Plus Project Am
Volume:	Existing Plus Project Am
Geometry:	Existing AM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Existing Plus Project Mitigation AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 3 3rd St/ G St	A	xxxxx	0.411	A	xxxxx	0.411	+ 0.000 V/C
# 12 Jefferson/ Sacramento Ave	B	xxxxx	0.682	B	xxxxx	0.682	+ 0.000 V/C
# 27 3rd St/ E St	A	xxxxx	0.411	A	xxxxx	0.411	+ 0.000 V/C

```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                Existing Plus Project Mitigation AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #3 3rd St/ G St
********************************************************************************
Cycle (sec):       100               Critical Vol./Cap. (X):        0.411
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      39               Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Protected
Rights:            Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     191  541   168    47  283     5     7    2    23     3    0     1
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  191  541   168    47  283     5     7    2    23     3    0     1
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   191  541   168    47  283     5     7    2    23     3    0     1
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  191  541   168    47  283     5     7    2    23     3    0     1
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   191  541   168    47  283     5     7    2    23     3    0     1
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 0.98  0.02  1.00 0.08  0.92  1.00 0.00  1.00
Final Sat.:  1500 1500  1500  1500 1474    26  1500  120  1380  1500    0  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.36  0.11  0.03 0.19  0.19  0.00 0.02  0.02  0.00 0.00  0.00
Crit Vol:          541          47                     25          3
Crit Moves:        ****       ****                   ****       ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                          Raley's Landing Project
                Existing Plus Project Mitigation AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #12 Jefferson/ Sacramento Ave
********************************************************************************
Cycle (sec):       100               Critical Vol./Cap. (X):        0.682
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      72               Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Protected
Rights:            Include          Include           Ignore          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  1  0  1   1  0  1  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     186  288   139    34  367    75    58  355   360   115  254    12
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  186  288   139    34  367    75    58  355   360   115  254    12
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
PHF Volume:   186  288   139    34  367    75    58  355     0   115  254    12
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  186  288   139    34  367    75    58  355     0   115  254    12
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00  1.00 1.00  1.00
Final Vol.:   186  288   139    34  367    75    58  355     0   115  254    12
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.91  0.09
Final Sat.:  1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 2865   135
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.19  0.09  0.02 0.24  0.05  0.04 0.24  0.00  0.08 0.09  0.09
Crit Vol:     186                    367               355         115
Crit Moves:  ****                   ****              ****        ****
********************************************************************************
```

```
-------------------------------------------------------------------------------
                           Raley's Landing Project
                Existing Plus Project Mitigation AM Peak Hour
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #27 3rd St/ E St
********************************************************************************
Cycle (sec):        100                Critical Vol./Cap. (X):        0.411
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       39                Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      23  163   180   159  214     4     4   53    34    28   12    34
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   23  163   180   159  214     4     4   53    34    28   12    34
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    23  163   180   159  214     4     4   53    34    28   12    34
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   23  163   180   159  214     4     4   53    34    28   12    34
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    23  163   180   159  214     4     4   53    34    28   12    34
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.48  0.52  1.00 0.98  0.02  1.00 0.61  0.39  1.00 0.26  0.74
Final Sat.:  1500  713   787  1500 1472    28  1500  914   586  1500  391  1109
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.23  0.23  0.11 0.15  0.15  0.00 0.06  0.06  0.02 0.03  0.03
Crit Vol:                343   159                    87          28
Crit Moves:             ****  ****                  ****        ****
********************************************************************************
```

Intersection Capacity Analysis

Existing Plus Project Mitigations

PM Peak Hour Scenario

Raley's Landing Project
Existing Plus Project Mitigation PM Peak Hour

Scenario Report

Scenario:	Existing Plus Project PM
Command:	Existing Plus Project Pm
Volume:	Existing Plus Project PM
Geometry:	Existing PM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Existing Plus Project Mitigation PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base			Future			Change
		Del/	V/		Del/	V/	in
	LOS	Veh	C	LOS	Veh	C	
# 3 3rd St/ G St	B	xxxxx	0.649	B	xxxxx	0.649	+ 0.000 V/C
# 12 Jefferson/ Sacramento Ave	C	xxxxx	0.764	C	xxxxx	0.764	+ 0.000 V/C
# 27 3rd St/ E St	A	xxxxx	0.373	A	xxxxx	0.373	+ 0.000 V/C

```
--------------------------------------------------------------------------------
                         Raley's Landing Project
                Existing Plus Project Mitigation PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #3 3rd St/ G St
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.649
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       65               Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    332  376     1    0  475     8    6    0    19  140    1    47
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 332  376     1    0  475     8    6    0    19  140    1    47
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  332  376     1    0  475     8    6    0    19  140    1    47
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 332  376     1    0  475     8    6    0    19  140    1    47
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:  332  376     1    0  475     8    6    0    19  140    1    47
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.00  1.00 1.00 0.98  0.02 1.00 0.00  1.00 1.00 0.02  0.98
Final Sat.: 1500 1500  1500 1500 1475    25 1500    0  1500 1500   31  1469
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.22 0.25  0.00 0.00 0.32  0.32 0.00 0.00  0.01 0.09 0.03  0.03
Crit Vol:    332                        483               19  140
Crit Moves: ****                       ****             **** ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                         Raley's Landing Project
                Existing Plus Project Mitigation PM Peak Hour
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #12 Jefferson/ Sacramento Ave
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.764
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       97               Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include           Ignore          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  1  0  1   1  0  1  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    401  389   205   19  226    74  130  319   314  200  306    31
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 401  389   205   19  226    74  130  319   314  200  306    31
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00
PHF Volume:  401  389   205   19  226    74  130  319     0  200  306    31
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 401  389   205   19  226    74  130  319     0  200  306    31
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  1.00
Final Vol.:  401  389   205   19  226    74  130  319     0  200  306    31
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.82  0.18
Final Sat.: 1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 2724   276
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.27 0.26  0.14 0.01 0.15  0.05 0.09 0.21  0.00 0.13 0.11  0.11
Crit Vol:    401                  226               319        200
Crit Moves: ****                 ****              ****       ****
********************************************************************************
```

```
------------------------------------------------------------------------------
                         Raley's Landing Project
                Existing Plus Project Mitigation PM Peak Hour
------------------------------------------------------------------------------
                    Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
******************************************************************************
Intersection #27 3rd St/ E St
******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.373
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       36              Level Of Service:                  A
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  0  1  0    1  0  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      39  285    60    37  207     7     8   14    20   144   45   121
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   39  285    60    37  207     7     8   14    20   144   45   121
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    39  285    60    37  207     7     8   14    20   144   45   121
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   39  285    60    37  207     7     8   14    20   144   45   121
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    39  285    60    37  207     7     8   14    20   144   45   121
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.83  0.17  1.00 0.97  0.03  1.00 0.41  0.59  1.00 0.27  0.73
Final Sat.:  1500 1239   261  1500 1451    49  1500  618   882  1500  407  1093
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.23  0.23  0.02 0.14  0.14  0.01 0.02  0.02  0.10 0.11  0.11
Crit Vol:          345          37                              34   144
Crit Moves:       ****        ****                            ****  ****
******************************************************************************
```

Intersection Capacity Analysis

Cumulative Plus Project Mitigations

AM Peak Hour Scenario

Raley's Landing Project
Cumulative Plus Project Mitigated AM Peak Hour

Scenario Report

Scenario:	CumPProj Mit Am
Command:	CumPProj AM
Volume:	CumPProj Am
Geometry:	CumPProj AM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Cumulative Plus Project Mitigated AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base			Future			Change
		Del/	V/		Del/	V/	in
	LOS	Veh	C	LOS	Veh	C	
# 2 3rd St/ F St	B	xxxxx	0.673	B	xxxxx	0.673	+ 0.000 V/C
# 3 3rd St/ G St	B	xxxxx	0.689	B	xxxxx	0.689	+ 0.000 V/C
# 5 3rd St/ Tower Bridge Gateway	F	xxxxx	1.061	F	xxxxx	1.061	+ 0.000 V/C
# 7 5th St/ F St	A	xxxxx	0.513	A	xxxxx	0.513	+ 0.000 V/C
# 8 5th St/ G St	A	xxxxx	0.411	A	xxxxx	0.411	+ 0.000 V/C
# 18 3rd St/ Capital Mall	C	26.1	0.832	C	26.1	0.832	+ 0.000 D/V
# 19 3rd St/ J St	F	94.2	1.126	F	94.2	1.126	+ 0.000 D/V
# 20 3rd St/ P St	B	11.2	0.465	B	11.2	0.465	+ 0.000 D/V
# 22 Jibboom St/ I St	E	55.2	0.972	E	55.2	0.972	+ 0.000 D/V
# 27 3rd St/ E St	B	xxxxx	0.668	B	xxxxx	0.668	+ 0.000 V/C

Raley's Landing Project
Cumulative Plus Project Mitigated AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #2 3rd St/ F St

Cycle (sec):	100	Critical Vol./Cap. (X):	0.673
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	70	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0 1 0			1 0 1 0 1			1 0 0 1 0			1 0 0 1 0		
Volume Module:												
Base Vol:	180	484	149	54	358	53	131	34	232	57	22	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	484	149	54	358	53	131	34	232	57	22	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	484	149	54	358	53	131	34	232	57	22	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	484	149	54	358	53	131	34	232	57	22	30
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	180	484	149	54	358	53	131	34	232	57	22	30
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.76	0.24	1.00	1.00	1.00	1.00	0.13	0.87	1.00	0.42	0.58
Final Sat.:	1500	1147	353	1500	1500	1500	1500	192	1308	1500	635	865
Capacity Analysis Module:												
Vol/Sat:	0.12	0.42	0.42	0.04	0.24	0.04	0.09	0.18	0.18	0.04	0.03	0.03
Crit Vol:		633		54				266		57		
Crit Moves:		****		****				****		****		

Raley's Landing Project
Cumulative Plus Project Mitigated AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #3 3rd St/ G St

Cycle (sec):	100	Critical Vol./Cap. (X):	0.689
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	73	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 0 1			1 0 1 1 0			1 0 0 1 0			1 0 0 1 0		
Volume Module:												
Base Vol:	278	829	174	110	632	7	6	2	34	59	0	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	278	829	174	110	632	7	6	2	34	59	0	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	278	829	174	110	632	7	6	2	34	59	0	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	278	829	174	110	632	7	6	2	34	59	0	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	278	829	174	110	632	7	6	2	34	59	0	47
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.98	0.02	1.00	0.06	0.94	1.00	0.00	1.00
Final Sat.:	1500	1500	1500	1500	2967	33	1500	83	1417	1500	0	1500
Capacity Analysis Module:												
Vol/Sat:	0.19	0.55	0.12	0.07	0.21	0.21	0.00	0.02	0.02	0.04	0.00	0.03
Crit Vol:		829		110				36		59		
Crit Moves:		****		****				****		****		

```
-------------------------------------------------------------------------------
                         Raley's Landing Project
               Cumulative Plus Project Mitigated AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 3rd St/ Tower Bridge Gateway
*******************************************************************************
Cycle (sec):        100             Critical Vol./Cap. (X):         1.061
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      180             Level Of Service:                   F
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  2  0  1   2  0  1  1  0   2  0  2  0  1   2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     111  465   981   295  286    76   179  796   162   982  688   488
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  111  465   981   295  286    76   179  796   162   982  688   488
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   111  465   981   295  286    76   179  796   162   982  688   488
Reduct Vol:     0    0   490     0    0     0     0    0    55     0    0   205
Reduced Vol:  111  465   491   295  286    76   179  796   107   982  688   283
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.10 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00
Final Vol.:   122  465   491   325  286    76   197  796   107  1080  688   283
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 2.00  1.00  2.00 1.58  0.42  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:  3000 3000  1500  3000 2370   630  3000 3000  1500  3000 3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.16  0.33  0.11 0.12  0.12  0.07 0.27  0.07  0.36 0.23  0.19
Crit Vol:                491   162                    398         540
Crit Moves:             ****  ****                   ****        ****
*******************************************************************************
```



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-------------------------------------------------------------------------------
                         Raley's Landing Project
               Cumulative Plus Project Mitigated AM Peak Hour
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Base Volume Alternative)
*******************************************************************************
Intersection #7 5th St/ F St
*******************************************************************************
Cycle (sec):        100             Critical Vol./Cap. (X):         0.513
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       30             Level Of Service:                   A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  1  0   0  1  0  1  0   0  1  0  0  1   0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      62  524   101   192  511    13     5   63    71    67   72   123
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   62  524   101   192  511    13     5   63    71    67   72   123
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    62  524   101   192  511    13     5   63    71    67   72   123
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   62  524   101   192  511    13     5   63    71    67   72   123
PCE Adj:     2.00 1.00  1.00  4.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   124  524   101   768  511    13     5   63    71    67   72   123
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.20 1.53  0.27  1.00 0.98  0.02  0.07 0.93  1.00  0.48 0.52  1.00
Final Sat.:   327 2528   445  1650 1617    33   121 1529  1650   795  855  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.19 0.21  0.23  0.12 0.32  0.39  0.04 0.04  0.04  0.08 0.08  0.07
Crit Vol:      62                      646                 71    67
Crit Moves:  ****                     ****               ****  ****
*******************************************************************************
```

Raley's Landing Project
Cumulative Plus Project Mitigated AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #8 5th St/ G St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.411
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Approach:	North Bound	South Bound	East Bound	West Bound
Control:	Permitted	Permitted	Permitted	Permitted
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	0 1 0 1 0	0 1 0 1 0	0 1 0 0 1	0 1 0 0 1

Movement:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	11	647	27	29	646	1	1	2	34	252	2	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	647	27	29	646	1	1	2	34	252	2	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	647	27	29	646	1	1	2	34	252	2	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	647	27	29	646	1	1	2	34	252	2	51
PCE Adj:	4.00	1.00	1.00	4.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	44	647	27	116	646	1	1	2	34	252	2	51
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.03	1.89	0.08	0.09	1.90	0.01	0.33	0.67	1.00	0.99	0.01	1.00
Final Sat.:	56	3120	124	162	3133	4	550	1100	1650	1637	13	1650
Capacity Analysis Module:												
Vol/Sat:	0.20	0.21	0.22	0.18	0.21	0.23	0.00	0.00	0.02	0.15	0.15	0.03
Crit Vol:	11					382			34	252		
Crit Moves:	****					****			****	****		

Raley's Landing Project
Cumulative Plus Project Mitigated AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 3rd St/ Capital Mall

Cycle (sec): 100 Critical Vol./Cap. (X): 0.832
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 26.1
Optimal Cycle: 66 Level Of Service: C

Approach:	North Bound	South Bound	East Bound	West Bound
Control:	Permitted	Permitted	Protected	Protected
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	0 0 0 0 0	0 1 1 1 1	0 0 2 1 0	1 0 2 0 0

Movement:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Volume Module:												
Base Vol:	0	0	0	269	562	980	0	1208	419	75	987	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	269	562	980	0	1208	419	75	987	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	269	562	980	0	1208	419	75	987	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	269	562	980	0	1208	419	75	987	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	269	562	980	0	1208	419	75	987	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.79	0.79	0.86	0.86	1.00
Lanes:	0.00	0.00	0.00	0.65	1.35	2.00	0.00	2.23	0.77	1.00	2.00	0.00
Final Sat.:	0	0	0	851	1778	2628	0	3331	1155	1625	3249	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.32	0.32	0.37	0.00	0.36	0.36	0.05	0.30	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.00	0.45	0.45	0.45	0.00	0.44	0.44	0.06	0.49	0.00
Volume/Cap:	0.00	0.00	0.00	0.71	0.71	0.83	0.00	0.83	0.83	0.83	0.62	0.00
Delay/Veh:	0.0	0.0	0.0	23.2	23.2	27.1	0.0	28.1	28.1	91.9	19.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	23.2	23.2	27.1	0.0	28.1	28.1	91.9	19.3	0.0
HCM2kAvg:	0	0	0	12	12	17	0	17	17	4	12	0

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--------------------------------------------------------------------------------
                         Raley's Landing Project
              Cumulative Plus Project Mitigated AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #19 3rd St/ J St
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        1.126
Loss Time (sec):     15 (Y+R =  4 sec) Average Delay (sec/veh):        94.2
Optimal Cycle:      180               Level Of Service:                  F
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  2   1  0  2  0  0   0  1  2  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    54    99  134     0    49 1789   542     9 1633   540
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0    0    54    99  134     0    49 1789   542     9 1633   540
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0    0    54    99  134     0    49 1789   542     9 1633   540
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   0    0    54    99  134     0    49 1789   542     9 1633   540
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0    0    54    99  134     0    49 1789   542     9 1633   540
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  0.67  0.69 0.86  1.00  0.79 0.79  0.79  0.79 0.79  0.79
Lanes:       0.00 0.00  2.00  1.00 2.00  0.00  0.08 3.01  0.91  0.01 2.25  0.74
Final Sat.:    0    0  2558  1315 3249     0   124 4515  1368    19 3364  1113
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.02  0.08 0.04  0.00  0.40 0.40  0.40  0.49 0.49  0.49
Crit Moves:                   ****                   ****         ****
Green/Cycle: 0.00 0.00  0.07  0.07 0.07  0.00  0.35 0.35  0.35  0.43 0.43  0.43
Volume/Cap:  0.00 0.00  0.32  1.13 0.62  0.00  1.13 1.13  1.13  1.13 1.13  1.13
Delay/Veh:    0.0  0.0  45.5 180.6 50.7   0.0  95.8 95.8  95.8  92.4 92.4  92.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0  45.5 180.6 50.7   0.0  95.8 95.8  95.8  92.4 92.4  92.4
HCM2kAvg:      0    0     1     9    3     0    30   30    30    36   36    36
********************************************************************************
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--------------------------------------------------------------------------------
                         Raley's Landing Project
              Cumulative Plus Project Mitigated AM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #20 3rd St/ P St
********************************************************************************
Cycle (sec):         50               Critical Vol./Cap. (X):        0.465
Loss Time (sec):     10 (Y+R =  4 sec) Average Delay (sec/veh):        11.2
Optimal Cycle:       32               Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  2  0  2   0  0  0  0  0   0  1  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0     0  518   469     0    0     0   130  752     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   0    0     0     0  518   469     0    0     0   130  752     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0    0     0     0  518   469     0    0     0   130  752     0
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   0    0     0     0  518   469     0    0     0   130  752     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0    0     0     0  518   469     0    0     0   130  752     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  1.00 0.86  0.67  1.00 1.00  1.00  0.82 0.82  1.00
Lanes:       0.00 0.00  0.00  0.00 2.00  2.00  0.00 0.00  0.00  0.44 2.56  0.00
Final Sat.:    0    0     0     0 3249  2558     0    0     0   688 3980     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.00 0.16  0.18  0.00 0.00  0.00  0.19 0.19  0.00
Crit Moves:                              ****                        ****
Green/Cycle: 0.00 0.00  0.00  0.00 0.39  0.39  0.00 0.00  0.00  0.41 0.41  0.00
Volume/Cap:  0.00 0.00  0.00  0.00 0.40  0.47  0.00 0.00  0.00  0.47 0.47  0.00
Delay/Veh:    0.0  0.0   0.0   0.0 11.1  11.6   0.0  0.0   0.0  11.1 11.1   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0   0.0 11.1  11.6   0.0  0.0   0.0  11.1 11.1   0.0
HCM2kAvg:      0    0     0     0    3     3     0    0     0     4    4     0
********************************************************************************
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------------------------------------------------------------------------------
                        Raley's Landing Project
             Cumulative Plus Project Mitigated AM Peak Hour
------------------------------------------------------------------------------
                  Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #22 Jibboom St/ I St
******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.972
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      55.2
Optimal Cycle:      180              Level Of Service:                  E
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  1! 0  0   1  0  1  0  0   0  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  107    0   590  562  259     0    0  428     7
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  107    0   590  562  259     0    0  428     7
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  107    0   590  562  259     0    0  428     7
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  107    0   590  562  259     0    0  428     7
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0  107    0   590  562  259     0    0  428     7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.84 1.00  0.84 0.95 1.00  1.00 1.00 1.00  0.85
Lanes:       0.00 0.00  0.00 0.15 0.00  0.85 1.00 1.00  0.00 0.00 1.00  1.00
Final Sat.:    0    0     0  246    0  1357 1805 1900     0    0 1900  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.43 0.00  0.43 0.31 0.14  0.00 0.00 0.23  0.00
Crit Moves:                  ****            ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.45 0.00  0.45 0.32 0.55  0.00 0.00 0.23  0.23
Volume/Cap:  0.00 0.00  0.00 0.97 0.00  0.97 0.97 0.25  0.00 0.00 0.97  0.02
Delay/Veh:    0.0  0.0   0.0 53.6  0.0  53.6 63.7 11.7   0.0  0.0 73.5  29.7
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 53.6  0.0  53.6 63.7 11.7   0.0  0.0 73.5  29.7
HCM2kAvg:      0    0     0   28    0    28   24    4     0    0   18     0
******************************************************************************
```



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------------------------------------------------------------------------------
                        Raley's Landing Project
             Cumulative Plus Project Mitigated AM Peak Hour
------------------------------------------------------------------------------
                  Level Of Service Computation Report
        Circular 212 Planning Method (Base Volume Alternative)
******************************************************************************
Intersection #27 3rd St/ E St
******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.668
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):    xxxxxx
Optimal Cycle:       69              Level Of Service:                  B
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     52  255   339  179  320    25   25   89    52   88   34    59
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  52  255   339  179  320    25   25   89    52   88   34    59
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   52  255   339  179  320    25   25   89    52   88   34    59
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  52  255   339  179  320    25   25   89    52   88   34    59
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   52  255   339  179  320    25   25   89    52   88   34    59
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 0.43  0.57 1.00 0.93  0.07 1.00 0.63  0.37 1.00 0.37  0.63
Final Sat.:  1500  644   856 1500 1391   109 1500  947   553 1500  548   952
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.40  0.40 0.12 0.23  0.23 0.02 0.09  0.09 0.06 0.06  0.06
Crit Vol:          594         179                    141         88
Crit Moves:       ****        ****                   ****        ****
******************************************************************************
```

Intersection Capacity Analysis

Cumulative Plus Project Mitigations

PM Peak Hour Scenario

Raley's Landing Project
Cumulative Plus Project Mitigated PM Peak Hour

Scenario Report

Scenario:	CumPProj Mit Pm
Command:	CumPProj PM
Volume:	CumPProj Pm
Geometry:	CumPProj PM
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Raley's Landing Project
Cumulative Plus Project Mitigated PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/C	Future LOS	Future Del/ Veh	Future V/C	Change in
# 2 3rd St/ F St	C	xxxxx	0.770	C	xxxxx	0.770	+ 0.000 V/C
# 3 3rd St/ G St	C	xxxxx	0.744	C	xxxxx	0.744	+ 0.000 V/C
# 5 3rd St/ Tower Bridge Gateway	F	xxxxx	1.163	F	xxxxx	1.163	+ 0.000 V/C
# 7 5th St/ F St	A	xxxxx	0.491	A	xxxxx	0.491	+ 0.000 V/C
# 8 5th St/ G St	A	xxxxx	0.567	A	xxxxx	0.567	+ 0.000 V/C
# 18 3rd St/ Capital Mall	C	32.0	0.963	C	32.0	0.963	+ 0.000 D/V
# 19 3rd St/ J St	C	29.7	0.734	C	29.7	0.734	+ 0.000 D/V
# 20 3rd St/ P St	D	39.9	1.033	D	39.9	1.033	+ 0.000 D/V
# 22 Jibboom St/ I St	E	78.8	1.076	E	78.8	1.076	+ 0.000 D/V
# 27 3rd St/ E St	B	xxxxx	0.663	B	xxxxx	0.663	+ 0.000 V/C

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--------------------------------------------------------------------------------
                          Raley's Landing Project
                Cumulative Plus Project Mitigated PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #2 3rd St/ F St
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.770
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       99               Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Protected
Rights:            Include           Ovl             Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  1  0  1   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     305  392    96    24  534   128   156   22   122   172   41    72
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  305  392    96    24  534   128   156   22   122   172   41    72
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   305  392    96    24  534   128   156   22   122   172   41    72
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  305  392    96    24  534   128   156   22   122   172   41    72
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   305  392    96    24  534   128   156   22   122   172   41    72
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.80  0.20  1.00 1.00  1.00  1.00 0.15  0.85  1.00 0.36  0.64
Final Sat.:  1500 1205   295  1500 1500  1500  1500  229  1271  1500  544   956
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.33  0.33  0.02 0.36  0.09  0.10 0.10  0.10  0.11 0.08  0.08
Crit Vol:     305                    534                    144   172
Crit Moves:  ****                   ****                   ****  ****
********************************************************************************
```



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--------------------------------------------------------------------------------
                          Raley's Landing Project
                Cumulative Plus Project Mitigated PM Peak Hour
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #3 3rd St/ G St
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.744
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       89               Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Protected
Rights:             Ovl              Ovl             Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  1  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     511  781    96    51  843     6     9    0    33   147    1   115
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  511  781    96    51  843     6     9    0    33   147    1   115
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   511  781    96    51  843     6     9    0    33   147    1   115
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  511  781    96    51  843     6     9    0    33   147    1   115
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   511  781    96    51  843     6     9    0    33   147    1   115
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  1.00  1.00 1.99  0.01  1.00 0.00  1.00  1.00 0.01  0.99
Final Sat.:  1500 1500  1500  1500 2979    21  1500    0  1500  1500   13  1487
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.34 0.52  0.06  0.03 0.28  0.28  0.01 0.00  0.02  0.10 0.08  0.08
Crit Vol:     511                    424                     33   147
Crit Moves:  ****                   ****                   ****  ****
********************************************************************************
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--------------------------------------------------------------------------------
                         Raley's Landing Project
            Cumulative Plus Project Mitigated PM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
        Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #5 3rd St/ Tower Bridge Gateway
********************************************************************************
Cycle (sec):        100             Critical Vol./Cap. (X):        1.163
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      180             Level Of Service:                  F
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        2  0  2  0  1   2  0  1  1  0   2  0  2  0  1   2  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     234  380  1067   365  404   146   216  847   172  1068  697   492
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  234  380  1067   365  404   146   216  847   172  1068  697   492
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   234  380  1067   365  404   146   216  847   172  1068  697   492
Reduct Vol:     0    0   534     0    0     0     0    0   114     0    0   258
Reduced Vol:  234  380   533   365  404   146   216  847    58  1068  697   234
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.10 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00  1.10 1.00  1.00
Final Vol.:   257  380   533   402  404   146   238  847    58  1175  697   234
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 2.00  1.00  2.00 1.47  0.53  2.00 2.00  1.00  2.00 2.00  1.00
Final Sat.:  3000 3000  1500  3000 2204   796  3000 3000  1500  3000 3000  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.13  0.36  0.13 0.18  0.18  0.08 0.28  0.04  0.39 0.23  0.16
Crit Vol:                533   201                   424         587
Crit Moves:             ****  ****                  ****        ****
********************************************************************************
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--------------------------------------------------------------------------------
                         Raley's Landing Project
            Cumulative Plus Project Mitigated PM Peak Hour
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
        Circular 212 Planning Method (Base Volume Alternative)
********************************************************************************
Intersection #7 5th St/ F St
********************************************************************************
Cycle (sec):        100             Critical Vol./Cap. (X):        0.491
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       28             Level Of Service:                  A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  1  0   0  1  0  1  0   0  1  0  0  1   0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      38  527   132    99  628     6    13   51   115   142   85   229
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   38  527   132    99  628     6    13   51   115   142   85   229
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    38  527   132    99  628     6    13   51   115   142   85   229
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   38  527   132    99  628     6    13   51   115   142   85   229
PCE Adj:     4.00 1.00  1.00  4.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   152  527   132   396  628     6    13   51   115   142   85   229
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1650 1650  1650  1650 1650  1650  1650 1650  1650  1650 1650  1650
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.13 1.54  0.33  0.45 1.54  0.01  0.20 0.80  1.00  0.63 0.37  1.00
Final Sat.:   215 2548   537   749 2531    19   335 1315  1650  1032  618  1650
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.18 0.21  0.25  0.13 0.25  0.31  0.04 0.04  0.07  0.14 0.14  0.14
Crit Vol:      38                            515               115   142
Crit Moves:  ****                           ****              ****  ****
********************************************************************************
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Raley's Landing Project
Cumulative Plus Project Mitigated PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #8 5th St/ G St

Cycle (sec):	100	Critical Vol./Cap. (X):	0.567
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	A

Approach:	North Bound	South Bound	East Bound	West Bound
Control:	Permitted	Permitted	Permitted	Permitted
Rights:	Include	Include	Include	Include
Lanes:	0 1 0 1 0	0 1 0 1 0	0 1 0 0 1	0 1 0 0 1

Movement:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	25	682	78	55	830	2	2	2	50	334	3	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	682	78	55	830	2	2	2	50	334	3	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	682	78	55	830	2	2	2	50	334	3	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	682	78	55	830	2	2	2	50	334	3	41
PCE Adj:	4.00	1.00	1.00	4.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	100	682	78	220	830	2	2	2	50	334	3	41
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.07	1.75	0.18	0.15	1.84	0.01	0.50	0.50	1.00	0.99	0.01	1.00
Final Sat.:	116	2885	299	251	3042	6	825	825	1650	1635	15	1650
Capacity Analysis Module:												
Vol/Sat:	0.22	0.24	0.26	0.22	0.27	0.32	0.00	0.00	0.03	0.20	0.20	0.02
Crit Vol:	25					526			50	334		
Crit Moves:	****					****			****	****		

Raley's Landing Project
Cumulative Plus Project Mitigated PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 3rd St/ Capital Mall

Cycle (sec):	100	Critical Vol./Cap. (X):	0.963
Loss Time (sec):	6 (Y+R = 4 sec)	Average Delay (sec/veh):	32.0
Optimal Cycle:	152	Level Of Service:	C

Approach:	North Bound	South Bound	East Bound	West Bound
Control:	Permitted	Permitted	Protected	Protected
Rights:	Include	Include	Include	Include
Lanes:	0 0 0 0 0	0 1 1 1 1	0 0 2 1 0	1 0 2 0 0

Movement:	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	0	0	0	83	1321	839	0	863	696	35	1174	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	83	1321	839	0	863	696	35	1174	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	83	1321	839	0	863	696	35	1174	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	83	1321	839	0	863	696	35	1174	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	83	1321	839	0	863	696	35	1174	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.73	0.73	0.73	1.00	0.76	0.76	0.86	0.86	1.00
Lanes:	0.00	0.00	0.00	0.15	2.35	1.50	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	205	3267	2075	0	2904	1452	1625	3249	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.40	0.40	0.40	0.00	0.30	0.48	0.02	0.36	0.00
Crit Moves:					****				****	****		
Green/Cycle:	0.00	0.00	0.00	0.42	0.42	0.42	0.00	0.50	0.50	0.02	0.52	0.00
Volume/Cap:	0.00	0.00	0.00	0.96	0.96	0.96	0.00	0.60	0.96	0.96	0.69	0.00
Delay/Veh:	0.0	0.0	0.0	39.5	39.5	39.5	0.0	18.3	38.8	182.9	19.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	39.5	39.5	39.5	0.0	18.3	38.8	182.9	19.3	0.0
HCM2kAvg:	0	0	0	23	23	23	0	10	26	3	14	0

Raley's Landing Project
Cumulative Plus Project Mitigated PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 3rd St/ J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.734
Loss Time (sec): 15 (Y+R = 4 sec) Average Delay (sec/veh): 29.7
Optimal Cycle: 72 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0 1 1			1 0 2 0 0			0 1 2 1 0			0 1 1 1 0		
Volume Module:												
Base Vol:	0	3	163	159	344	0	115	1193	513	6	569	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3	163	159	344	0	115	1193	513	6	569	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3	163	159	344	0	115	1193	513	6	569	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3	163	159	344	0	115	1193	513	6	569	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3	163	159	344	0	115	1193	513	6	569	140
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.77	0.77	0.69	0.86	1.00	0.78	0.78	0.78	0.80	0.80	0.80
Lanes:	0.00	0.04	1.96	1.00	2.00	0.00	0.26	2.74	1.00	0.02	2.39	0.59
Final Sat.:	0	53	2865	1312	3249	0	392	4067	1486	38	3607	888
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.06	0.12	0.11	0.00	0.29	0.29	0.35	0.16	0.16	0.16
Crit Moves:				****					****	****		
Green/Cycle:	0.00	0.17	0.17	0.17	0.17	0.00	0.47	0.47	0.47	0.21	0.21	0.21
Volume/Cap:	0.00	0.34	0.34	0.73	0.64	0.00	0.62	0.62	0.73	0.73	0.73	0.73
Delay/Veh:	0.0	37.4	37.4	51.9	41.6	0.0	20.3	20.3	22.6	39.5	39.5	39.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	37.4	37.4	51.9	41.6	0.0	20.3	20.3	22.6	39.5	39.5	39.5
HCM2kAvg:	0	3	3	8	6	0	11	11	14	8	8	8

Raley's Landing Project
Cumulative Plus Project Mitigated PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 3rd St/ P St

Cycle (sec): 50 Critical Vol./Cap. (X): 1.033
Loss Time (sec): 10 (Y+R = 4 sec) Average Delay (sec/veh): 39.9
Optimal Cycle: 115 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0 0 0			0 0 2 0 2			0 0 0 0 0			0 1 2 0 0		
Volume Module:												
Base Vol:	0	0	0	0	859	964	0	0	0	130	1968	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	859	964	0	0	0	130	1968	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	859	964	0	0	0	130	1968	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	859	964	0	0	0	130	1968	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	0	859	964	0	0	0	130	1968	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	0.86	0.67	1.00	1.00	1.00	0.82	0.82	1.00
Lanes:	0.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.19	2.81	0.00
Final Sat.:	0	0	0	0	3249	2558	0	0	0	289	4379	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.26	0.38	0.00	0.00	0.00	0.45	0.45	0.00
Crit Moves:						****					****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.36	0.36	0.00	0.00	0.00	0.44	0.44	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.72	1.03	0.00	0.00	0.00	1.03	1.03	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	16.0	54.1	0.0	0.0	0.0	43.1	43.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	16.0	54.1	0.0	0.0	0.0	43.1	43.1	0.0
HCM2kAvg:	0	0	0	0	8	15	0	0	0	21	21	0

```
---------------------------------------------------------------------------------
                           Raley's Landing Project
                Cumulative Plus Project Mitigated PM Peak Hour
---------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
*********************************************************************************
Intersection #22 Jibboom St/ I St
*********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        1.076
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):      78.8
Optimal Cycle:      180              Level Of Service:                  E
*********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   0  0  1! 0  0   1  0  1  0  0   0  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0   17    0   552  936  285     0    0  400    12
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0     0   17    0   552  936  285     0    0  400    12
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     0    0     0   17    0   552  936  285     0    0  400    12
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0   17    0   552  936  285     0    0  400    12
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:     0    0     0   17    0   552  936  285     0    0  400    12
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.86 1.00  0.86 0.95 1.00  1.00 1.00 1.00  0.85
Lanes:       0.00 0.00  0.00 0.03 0.00  0.97 1.00 1.00  0.00 0.00 1.00  1.00
Final Sat.:     0    0     0   49    0  1592 1805 1900     0    0 1900  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.35 0.00  0.35 0.52 0.15  0.00 0.00 0.21  0.01
Crit Moves:                  ****            ****                  ****
Green/Cycle: 0.00 0.00  0.00 0.32 0.00  0.32 0.48 0.68  0.00 0.00 0.20  0.20
Volume/Cap:  0.00 0.00  0.00 1.08 0.00  1.08 1.08 0.22  0.00 0.00 1.08  0.04
Delay/Veh:    0.0  0.0   0.0 95.0  0.0  95.0 78.9  6.2   0.0  0.0  109  32.6
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 95.0  0.0  95.0 78.9  6.2   0.0  0.0  109  32.6
HCM2kAvg:       0    0     0   27    0    27   44    3     0    0   20     0
*********************************************************************************
```



```
---------------------------------------------------------------------------------
                           Raley's Landing Project
                Cumulative Plus Project Mitigated PM Peak Hour
---------------------------------------------------------------------------------
                      Level Of Service Computation Report
          Circular 212 Planning Method (Base Volume Alternative)
*********************************************************************************
Intersection #27 3rd St/ E St
*********************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.663
Loss Time (sec):      0 (Y+R =  4 sec) Average Delay (sec/veh):    xxxxxx
Optimal Cycle:       68              Level Of Service:                  B
*********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      48  460   112   45  359    10   25   20    47  310   61   140
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   48  460   112   45  359    10   25   20    47  310   61   140
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    48  460   112   45  359    10   25   20    47  310   61   140
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   48  460   112   45  359    10   25   20    47  310   61   140
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    48  460   112   45  359    10   25   20    47  310   61   140
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 0.80  0.20 1.00 0.97  0.03 1.00 0.30  0.70 1.00 0.30  0.70
Final Sat.:  1500 1206   294 1500 1459    41 1500  448  1052 1500  455  1045
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.38  0.38 0.03 0.25  0.25 0.02 0.04  0.04 0.21 0.13  0.13
Crit Vol:               572    45                  67        310
Crit Moves:             ****  ****                ****       ****
*********************************************************************************
```

APPENDIX D

AIR QUALITY DATA

Washington Street Property Construction Emissions

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\Washington Property Constr.urb
Project Name: Washington Property
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

Construction Start Month and Year: March, 2007
Construction Duration: 27
Total Land Use Area to be Developed: 6.86 acres
Maximum Acreage Disturbed Per Day: 2.5 acres
Single Family Units: 0 Multi-Family Units: 550
Retail/Office/Institutional/Industrial Square Footage: 40000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	25.00	-	25.00
Off-Road Diesel	17.58	112.97	145.37	-	4.39	4.39	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.13	0.24	2.57	0.00	0.01	0.00	0.01
Maximum lbs/day	17.71	113.21	147.94	0.00	29.40	4.39	25.01

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	196.89	236.88	-	7.91	7.91	0.00
Bldg Const Worker Trips	1.28	0.78	16.48	0.00	0.20	0.01	0.19
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.65	197.67	253.35	0.00	8.11	7.92	0.19
Max lbs/day all phases	30.65	197.67	253.35	0.00	32.93	7.92	25.01
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	190.65	240.01	-	7.20	7.20	0.00
Bldg Const Worker Trips	1.18	0.73	15.36	0.00	0.20	0.01	0.19
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.55	191.38	255.37	0.00	7.41	7.22	0.19
Max lbs/day all phases	30.55	191.38	255.37	0.00	7.41	7.22	0.19
*** 2009***							

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	184.48	243.27	-	6.50	6.50	0.00
Bldg Const Worker Trips	1.07	0.67	14.16	0.00	0.20	0.01	0.19
Arch Coatings Off-Gas	33.05	-	-	-	-	-	-
Arch Coatings Worker Trips	1.07	0.67	14.16	0.00	0.20	0.01	0.19
Asphalt Off-Gas	0.35	-	-	-	-	-	-
Asphalt Off-Road Diesel	8.64	51.80	72.84	-	1.62	1.62	0.00
Asphalt On-Road Diesel	0.05	0.90	0.17	0.00	0.02	0.02	0.00
Asphalt Worker Trips	0.03	0.02	0.40	0.00	0.01	0.00	0.01
Maximum lbs/day	73.62	238.54	345.00	0.00	8.55	8.16	0.39
Max lbs/day all phases	73.62	238.54	345.00	0.00	8.55	8.16	0.39

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Mar '07
Phase 2 Duration: 3 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
3	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '07
Phase 3 Duration: 24 months
Start Month/Year for SubPhase Building: Jun '07
SubPhase Building Duration: 24 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
1	Cranes	190	0.430	8.0
4	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Skid Steer Loaders	62	0.515	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Mar '09
SubPhase Architectural Coatings Duration: 2.4 months
Start Month/Year for SubPhase Asphalt: Apr '09
SubPhase Asphalt Duration: 1.2 months
Acres to be Paved: 3.5
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Apartments high rise
have changed from the defaults 5.29/8.87 to 6.63/8.87

Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0013
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0013
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 3x daily
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 3x daily
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.

Changes made to the default values for Area

Changes made to the default values for Operations

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\Washington Property Constr.urb
Project Name: Washington Property
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: March, 2007
Construction Duration: 27
Total Land Use Area to be Developed: 6.86 acres
Maximum Acreage Disturbed Per Day: 2.5 acres
Single Family Units: 0 Multi-Family Units: 550
Retail/Office/Institutional/Industrial Square Footage: 40000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	25.00	-	25.00
Off-Road Diesel	17.58	112.97	145.37	-	4.39	4.39	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.13	0.24	2.57	0.00	0.01	0.00	0.01
Maximum lbs/day	17.71	113.21	147.94	0.00	29.40	4.39	25.01

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	196.89	236.88	-	7.91	7.91	0.00
Bldg Const Worker Trips	1.28	0.78	16.48	0.00	0.20	0.01	0.19
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.65	197.67	253.35	0.00	8.11	7.92	0.19
Max lbs/day all phases	30.65	197.67	253.35	0.00	32.93	7.92	25.01
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	190.65	240.01	-	7.20	7.20	0.00
Bldg Const Worker Trips	1.18	0.73	15.36	0.00	0.20	0.01	0.19
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.55	191.38	255.37	0.00	7.41	7.22	0.19
Max lbs/day all phases	30.55	191.38	255.37	0.00	7.41	7.22	0.19
*** 2009***							

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	184.48	243.27	-	6.50	6.50	0.00
Bldg Const Worker Trips	1.07	0.67	14.16	0.00	0.20	0.01	0.19
Arch Coatings Off-Gas	33.05	-	-	-	-	-	-
Arch Coatings Worker Trips	1.07	0.67	14.16	0.00	0.20	0.01	0.19
Asphalt Off-Gas	0.35	-	-	-	-	-	-
Asphalt Off-Road Diesel	8.64	51.80	72.84	-	1.62	1.62	0.00
Asphalt On-Road Diesel	0.05	0.90	0.17	0.00	0.02	0.02	0.00
Asphalt Worker Trips	0.03	0.02	0.40	0.00	0.01	0.00	0.01
Maximum lbs/day	73.62	238.54	345.00	0.00	8.55	8.16	0.39
Max lbs/day all phases	73.62	238.54	345.00	0.00	8.55	8.16	0.39

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Mar '07
Phase 2 Duration: 3 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
3	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '07
Phase 3 Duration: 24 months
Start Month/Year for SubPhase Building: Jun '07
SubPhase Building Duration: 24 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
1	Cranes	190	0.430	8.0
4	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Skid Steer Loaders	62	0.515	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Mar '09
SubPhase Architectural Coatings Duration: 2.4 months
Start Month/Year for SubPhase Asphalt: Apr '09
SubPhase Asphalt Duration: 1.2 months
Acres to be Paved: 3.5
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Apartments high rise
have changed from the defaults 5.29/8.87 to 6.63/8.87

Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0013
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0013
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 3x daily
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 3x daily
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.

Changes made to the default values for Area

Changes made to the default values for Operations

River 1 Area Construction Emissions

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\River 1 Constr.urb
Project Name: River 1 - Construction
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

Construction Start Month and Year: March, 2007
Construction Duration: 24
Total Land Use Area to be Developed: 4.58 acres
Maximum Acreage Disturbed Per Day: 2.5 acres
Single Family Units: 0 Multi-Family Units: 150
Retail/Office/Institutional/Industrial Square Footage: 437000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	25.00	-	25.00
Off-Road Diesel	17.58	112.97	145.37	-	4.39	4.39	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.13	0.24	2.57	0.00	0.01	0.00	0.01
Maximum lbs/day	17.71	113.21	147.94	0.00	29.40	4.39	25.01

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	196.89	236.88	-	7.91	7.91	0.00
Bldg Const Worker Trips	1.33	0.81	17.06	0.00	0.21	0.01	0.20
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.70	197.70	253.94	0.00	8.13	7.93	0.20
Max lbs/day all phases	30.70	197.70	253.94	0.00	32.94	7.93	25.01
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	190.65	240.01	-	7.20	7.20	0.00
Bldg Const Worker Trips	1.22	0.75	15.91	0.00	0.21	0.01	0.20
Arch Coatings Off-Gas	34.28	-	-	-	-	-	-
Arch Coatings Worker Trips	1.22	0.75	15.91	0.00	0.21	0.01	0.20
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	66.09	192.15	271.83	0.00	7.63	7.23	0.40
Max lbs/day all phases	66.09	192.15	271.83	0.00	7.63	7.23	0.40
*** 2009***							

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	184.48	243.27	-	6.50	6.50	0.00
Bldg Const Worker Trips	1.11	0.69	14.67	0.00	0.21	0.01	0.20
Arch Coatings Off-Gas	34.28	-	-	-	-	-	-
Arch Coatings Worker Trips	1.11	0.69	14.67	0.00	0.21	0.01	0.20
Asphalt Off-Gas	0.27	-	-	-	-	-	-
Asphalt Off-Road Diesel	5.04	30.52	42.23	-	0.98	0.98	0.00
Asphalt On-Road Diesel	0.04	0.70	0.14	0.00	0.02	0.02	0.00
Asphalt Worker Trips	0.03	0.02	0.34	0.00	0.00	0.00	0.00
Maximum lbs/day	71.24	217.09	315.31	0.00	7.92	7.51	0.41
Max lbs/day all phases	71.24	217.09	315.31	0.00	7.92	7.51	0.41

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Mar '07
Phase 2 Duration: 2.6 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
3	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: May '07
Phase 3 Duration: 21.4 months
Start Month/Year for SubPhase Building: May '07
SubPhase Building Duration: 21.4 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
1	Cranes	190	0.430	8.0
4	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Skid Steer Loaders	62	0.515	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '08
SubPhase Architectural Coatings Duration: 2.1 months
Start Month/Year for SubPhase Asphalt: Jan '09
SubPhase Asphalt Duration: 1.1 months
Acres to be Paved: 2.5
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Apartments high rise
have changed from the defaults 5.29/2.42 to 4.31/0.34

Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0013
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0013

Changes made to the default values for Area

Changes made to the default values for Operations

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\River 1 Constr.urb
Project Name: River 1 - Construction
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: March, 2007
Construction Duration: 24
Total Land Use Area to be Developed: 4.58 acres
Maximum Acreage Disturbed Per Day: 2.5 acres
Single Family Units: 0 Multi-Family Units: 150
Retail/Office/Institutional/Industrial Square Footage: 437000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	25.00	-	25.00
Off-Road Diesel	17.58	112.97	145.37	-	4.39	4.39	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.13	0.24	2.57	0.00	0.01	0.00	0.01
Maximum lbs/day	17.71	113.21	147.94	0.00	29.40	4.39	25.01

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	196.89	236.88	-	7.91	7.91	0.00
Bldg Const Worker Trips	1.33	0.81	17.06	0.00	0.21	0.01	0.20
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.70	197.70	253.94	0.00	8.13	7.93	0.20
Max lbs/day all phases	30.70	197.70	253.94	0.00	32.94	7.93	25.01
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	190.65	240.01	-	7.20	7.20	0.00
Bldg Const Worker Trips	1.22	0.75	15.91	0.00	0.21	0.01	0.20
Arch Coatings Off-Gas	34.28	-	-	-	-	-	-
Arch Coatings Worker Trips	1.22	0.75	15.91	0.00	0.21	0.01	0.20
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	66.09	192.15	271.83	0.00	7.63	7.23	0.40
Max lbs/day all phases	66.09	192.15	271.83	0.00	7.63	7.23	0.40
*** 2009***							

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	184.48	243.27	-	6.50	6.50	0.00
Bldg Const Worker Trips	1.11	0.69	14.67	0.00	0.21	0.01	0.20
Arch Coatings Off-Gas	34.28	-	-	-	-	-	-
Arch Coatings Worker Trips	1.11	0.69	14.67	0.00	0.21	0.01	0.20
Asphalt Off-Gas	0.27	-	-	-	-	-	-
Asphalt Off-Road Diesel	5.04	30.52	42.23	-	0.98	0.98	0.00
Asphalt On-Road Diesel	0.04	0.70	0.14	0.00	0.02	0.02	0.00
Asphalt Worker Trips	0.03	0.02	0.34	0.00	0.00	0.00	0.00
Maximum lbs/day	71.24	217.09	315.31	0.00	7.92	7.51	0.41
Max lbs/day all phases	71.24	217.09	315.31	0.00	7.92	7.51	0.41

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Mar '07
Phase 2 Duration: 2.6 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
3	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: May '07
Phase 3 Duration: 21.4 months
Start Month/Year for SubPhase Building: May '07
SubPhase Building Duration: 21.4 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
1	Cranes	190	0.430	8.0
4	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Skid Steer Loaders	62	0.515	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '08
SubPhase Architectural Coatings Duration: 2.1 months
Start Month/Year for SubPhase Asphalt: Jan '09
SubPhase Asphalt Duration: 1.1 months
Acres to be Paved: 2.5
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Apartments high rise have changed from the defaults 5.29/2.42 to 4.31/0.34

Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0013
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0013

Changes made to the default values for Area

Changes made to the default values for Operations

River 2 Area Construction Emissions

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\River 2 Constr.urb
Project Name: River 2 - Construction
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

Construction Start Month and Year: March, 2008
Construction Duration: 36
Total Land Use Area to be Developed: 1.03 acres
Maximum Acreage Disturbed Per Day: 0.3 acres
Single Family Units: 0 Multi-Family Units: 150
Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	3.00	-	3.00
Off-Road Diesel	4.31	31.27	33.03	-	1.34	1.34	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.03	0.05	0.59	0.00	0.00	0.00	0.00
Maximum lbs/day	4.34	31.32	33.62	0.00	4.34	1.34	3.00

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	190.65	240.01	-	7.20	7.20	0.00
Bldg Const Worker Trips	0.30	0.19	3.93	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	29.67	190.84	243.95	0.00	7.26	7.21	0.05
Max lbs/day all phases	29.67	190.84	243.95	0.00	10.21	7.21	3.00
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	184.48	243.27	-	6.50	6.50	0.00
Bldg Const Worker Trips	0.27	0.17	3.63	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	29.65	184.65	246.89	0.00	6.55	6.50	0.05
Max lbs/day all phases	29.65	184.65	246.89	0.00	6.55	6.50	0.05
*** 2010***							

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	178.60	246.40	-	5.86	5.86	0.00
Bldg Const Worker Trips	0.25	0.16	3.34	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	6.36	-	-	-	-	-	-
Arch Coatings Worker Trips	0.25	0.16	3.34	0.00	0.05	0.00	0.05
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	36.23	178.92	253.08	0.00	5.96	5.86	0.10
Max lbs/day all phases	36.23	178.92	253.08	0.00	5.96	5.86	0.10

*** 2011***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	178.60	246.40	-	5.86	5.86	0.00
Bldg Const Worker Trips	0.25	0.16	3.34	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	6.36	-	-	-	-	-	-
Arch Coatings Worker Trips	0.25	0.16	3.34	0.00	0.05	0.00	0.05
Asphalt Off-Gas	0.04	-	-	-	-	-	-
Asphalt Off-Road Diesel	5.04	29.94	42.51	-	0.91	0.91	0.00
Asphalt On-Road Diesel	0.00	0.08	0.02	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.02	0.01	0.31	0.00	0.00	0.00	0.00
Maximum lbs/day	41.33	208.96	295.92	0.00	6.87	6.77	0.10
Max lbs/day all phases	41.33	208.96	295.92	0.00	6.87	6.77	0.10

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Mar '08
Phase 2 Duration: 4 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '08
Phase 3 Duration: 32 months
Start Month/Year for SubPhase Building: Jul '08
SubPhase Building Duration: 32 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
1	Cranes	190	0.430	8.0

4	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Skid Steer Loaders	62	0.515	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Nov '10
SubPhase Architectural Coatings Duration: 3.2 months
Start Month/Year for SubPhase Asphalt: Jan '11
SubPhase Asphalt Duration: 1.6 months
Acres to be Paved: 0.5
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Apartments high rise
have changed from the defaults 5.29/2.42 to 4.7/1.03

Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0013
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0013
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 3x daily
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 3x daily
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.

Changes made to the default values for Area

Changes made to the default values for Operations

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\River 2 Constr.urb
Project Name: River 2 - Construction
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: March, 2008
Construction Duration: 36
Total Land Use Area to be Developed: 1.03 acres
Maximum Acreage Disturbed Per Day: 0.3 acres
Single Family Units: 0 Multi-Family Units: 150
Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	3.00	-	3.00
Off-Road Diesel	4.31	31.27	33.03	-	1.34	1.34	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.03	0.05	0.59	0.00	0.00	0.00	0.00
Maximum lbs/day	4.34	31.32	33.62	0.00	4.34	1.34	3.00

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	190.65	240.01	-	7.20	7.20	0.00
Bldg Const Worker Trips	0.30	0.19	3.93	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	29.67	190.84	243.95	0.00	7.26	7.21	0.05
Max lbs/day all phases	29.67	190.84	243.95	0.00	10.21	7.21	3.00
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	184.48	243.27	-	6.50	6.50	0.00
Bldg Const Worker Trips	0.27	0.17	3.63	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	29.65	184.65	246.89	0.00	6.55	6.50	0.05
Max lbs/day all phases	29.65	184.65	246.89	0.00	6.55	6.50	0.05
*** 2010***							

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	178.60	246.40	-	5.86	5.86	0.00
Bldg Const Worker Trips	0.25	0.16	3.34	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	6.36	-	-	-	-	-	-
Arch Coatings Worker Trips	0.25	0.16	3.34	0.00	0.05	0.00	0.05
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	36.23	178.92	253.08	0.00	5.96	5.86	0.10
Max lbs/day all phases	36.23	178.92	253.08	0.00	5.96	5.86	0.10

*** 2011***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	178.60	246.40	-	5.86	5.86	0.00
Bldg Const Worker Trips	0.25	0.16	3.34	0.00	0.05	0.00	0.05
Arch Coatings Off-Gas	6.36	-	-	-	-	-	-
Arch Coatings Worker Trips	0.25	0.16	3.34	0.00	0.05	0.00	0.05
Asphalt Off-Gas	0.04	-	-	-	-	-	-
Asphalt Off-Road Diesel	5.04	29.94	42.51	-	0.91	0.91	0.00
Asphalt On-Road Diesel	0.00	0.08	0.02	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.02	0.01	0.31	0.00	0.00	0.00	0.00
Maximum lbs/day	41.33	208.96	295.92	0.00	6.87	6.77	0.10
Max lbs/day all phases	41.33	208.96	295.92	0.00	6.87	6.77	0.10

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Mar '08
Phase 2 Duration: 4 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '08
Phase 3 Duration: 32 months
Start Month/Year for SubPhase Building: Jul '08
SubPhase Building Duration: 32 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
1	Cranes	190	0.430	8.0

4	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Skid Steer Loaders	62	0.515	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Nov '10
SubPhase Architectural Coatings Duration: 3.2 months
Start Month/Year for SubPhase Asphalt: Jan '11
SubPhase Asphalt Duration: 1.6 months
Acres to be Paved: 0.5
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Apartments high rise
 have changed from the defaults 5.29/2.42 to 4.7/1.03

Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0013
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0013
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 3x daily
     has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
     has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 3x daily
     has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
     has been changed from off to on.

Changes made to the default values for Area

Changes made to the default values for Operations

River 3 Area Construction Emissions

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\River 3 Constr.urb
Project Name: River 3 Construction
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

Construction Start Month and Year: March, 2007
Construction Duration: 48
Total Land Use Area to be Developed: 5.5 acres
Maximum Acreage Disturbed Per Day: 2.5 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 620000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	25.00	-	25.00
Off-Road Diesel	17.58	112.97	145.37	-	4.39	4.39	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.13	0.24	2.57	0.00	0.01	0.00	0.01
Maximum lbs/day	17.71	113.21	147.94	0.00	29.40	4.39	25.01

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	196.89	236.88	-	7.91	7.91	0.00
Bldg Const Worker Trips	1.57	0.96	20.20	0.00	0.25	0.02	0.23
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.94	197.85	257.07	0.00	8.16	7.93	0.23
Max lbs/day all phases	30.94	197.85	257.07	0.00	32.94	7.93	25.01
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	190.65	240.01	-	7.20	7.20	0.00
Bldg Const Worker Trips	1.45	0.89	18.82	0.00	0.25	0.02	0.23
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.82	191.54	258.84	0.00	7.45	7.22	0.23
Max lbs/day all phases	30.82	191.54	258.84	0.00	7.45	7.22	0.23
*** 2009***							

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	184.48	243.27	-	6.50	6.50	0.00
Bldg Const Worker Trips	1.31	0.82	17.36	0.00	0.25	0.02	0.23
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.69	185.30	260.63	0.00	6.74	6.51	0.23
Max lbs/day all phases	30.69	185.30	260.63	0.00	6.74	6.51	0.23

*** 2010***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	178.60	246.40	-	5.86	5.86	0.00
Bldg Const Worker Trips	1.19	0.75	15.98	0.00	0.25	0.02	0.23
Arch Coatings Off-Gas	17.04	-	-	-	-	-	-
Arch Coatings Worker Trips	1.19	0.75	15.98	0.00	0.25	0.02	0.23
Asphalt Off-Gas	0.11	-	-	-	-	-	-
Asphalt Off-Road Diesel	5.04	29.94	42.51	-	0.91	0.91	0.00
Asphalt On-Road Diesel	0.01	0.26	0.05	0.00	0.01	0.01	0.00
Asphalt Worker Trips	0.02	0.01	0.31	0.00	0.00	0.00	0.00
Maximum lbs/day	53.98	210.32	321.23	0.00	7.28	6.82	0.46
Max lbs/day all phases	53.98	210.32	321.23	0.00	7.28	6.82	0.46
*** 2011***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	178.60	246.40	-	5.86	5.86	0.00
Bldg Const Worker Trips	1.19	0.75	15.98	0.00	0.25	0.02	0.23
Arch Coatings Off-Gas	17.04	-	-	-	-	-	-
Arch Coatings Worker Trips	1.19	0.75	15.98	0.00	0.25	0.02	0.23
Asphalt Off-Gas	0.11	-	-	-	-	-	-

Asphalt Off-Road Diesel	5.04	29.94	42.51	-	0.91	0.91	0.00
Asphalt On-Road Diesel	0.01	0.26	0.05	0.00	0.01	0.01	0.00
Asphalt Worker Trips	0.02	0.01	0.31	0.00	0.00	0.00	0.00
Maximum lbs/day	53.98	210.32	321.23	0.00	7.28	6.82	0.46
Max lbs/day all phases	53.98	210.32	321.23	0.00	7.28	6.82	0.46

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Mar '07
Phase 2 Duration: 5.3 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
3	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Aug '07
Phase 3 Duration: 42.7 months
Start Month/Year for SubPhase Building: Aug '07
SubPhase Building Duration: 42.7 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
1	Cranes	190	0.430	8.0
4	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Skid Steer Loaders	62	0.515	8.0

1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Oct '10
SubPhase Architectural Coatings Duration: 4.3 months
Start Month/Year for SubPhase Asphalt: Dec '10
SubPhase Asphalt Duration: 2.1 months
Acres to be Paved: 2.0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0013
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0013
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 3x daily
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 2x daily
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.

Changes made to the default values for Area

Changes made to the default values for Operations

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\River 3 Constr.urb
Project Name: River 3 Construction
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: March, 2007
Construction Duration: 48
Total Land Use Area to be Developed: 5.5 acres
Maximum Acreage Disturbed Per Day: 2.5 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 620000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	25.00	-	25.00
Off-Road Diesel	17.58	112.97	145.37	-	4.39	4.39	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.13	0.24	2.57	0.00	0.01	0.00	0.01
Maximum lbs/day	17.71	113.21	147.94	0.00	29.40	4.39	25.01

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	196.89	236.88	-	7.91	7.91	0.00
Bldg Const Worker Trips	1.57	0.96	20.20	0.00	0.25	0.02	0.23
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.94	197.85	257.07	0.00	8.16	7.93	0.23
Max lbs/day all phases	30.94	197.85	257.07	0.00	32.94	7.93	25.01
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	190.65	240.01	-	7.20	7.20	0.00
Bldg Const Worker Trips	1.45	0.89	18.82	0.00	0.25	0.02	0.23
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.82	191.54	258.84	0.00	7.45	7.22	0.23
Max lbs/day all phases	30.82	191.54	258.84	0.00	7.45	7.22	0.23
*** 2009***							

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	184.48	243.27	-	6.50	6.50	0.00
Bldg Const Worker Trips	1.31	0.82	17.36	0.00	0.25	0.02	0.23
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	30.69	185.30	260.63	0.00	6.74	6.51	0.23
Max lbs/day all phases	30.69	185.30	260.63	0.00	6.74	6.51	0.23

*** 2010***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	178.60	246.40	-	5.86	5.86	0.00
Bldg Const Worker Trips	1.19	0.75	15.98	0.00	0.25	0.02	0.23
Arch Coatings Off-Gas	17.04	-	-	-	-	-	-
Arch Coatings Worker Trips	1.19	0.75	15.98	0.00	0.25	0.02	0.23
Asphalt Off-Gas	0.11	-	-	-	-	-	-
Asphalt Off-Road Diesel	5.04	29.94	42.51	-	0.91	0.91	0.00
Asphalt On-Road Diesel	0.01	0.26	0.05	0.00	0.01	0.01	0.00
Asphalt Worker Trips	0.02	0.01	0.31	0.00	0.00	0.00	0.00
Maximum lbs/day	53.98	210.32	321.23	0.00	7.28	6.82	0.46
Max lbs/day all phases	53.98	210.32	321.23	0.00	7.28	6.82	0.46

*** 2011***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	29.37	178.60	246.40	-	5.86	5.86	0.00
Bldg Const Worker Trips	1.19	0.75	15.98	0.00	0.25	0.02	0.23
Arch Coatings Off-Gas	17.04	-	-	-	-	-	-
Arch Coatings Worker Trips	1.19	0.75	15.98	0.00	0.25	0.02	0.23
Asphalt Off-Gas	0.11	-	-	-	-	-	-

Asphalt Off-Road Diesel	5.04	29.94	42.51	-	0.91	0.91	0.00
Asphalt On-Road Diesel	0.01	0.26	0.05	0.00	0.01	0.01	0.00
Asphalt Worker Trips	0.02	0.01	0.31	0.00	0.00	0.00	0.00
Maximum lbs/day	53.98	210.32	321.23	0.00	7.28	6.82	0.46
Max lbs/day all phases	53.98	210.32	321.23	0.00	7.28	6.82	0.46

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Mar '07
Phase 2 Duration: 5.3 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
3	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Aug '07
Phase 3 Duration: 42.7 months
Start Month/Year for SubPhase Building: Aug '07
SubPhase Building Duration: 42.7 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
1	Cranes	190	0.430	8.0
4	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Skid Steer Loaders	62	0.515	8.0

1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Oct '10
SubPhase Architectural Coatings Duration: 4.3 months
Start Month/Year for SubPhase Asphalt: Dec '10
SubPhase Asphalt Duration: 2.1 months
Acres to be Paved: 2.0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0013
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0013
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 3x daily
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 2x daily
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.

Changes made to the default values for Area

Changes made to the default values for Operations

Operational Emissions for Full Buildout

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\Operational with Traffic Data.urb
Project Name: Operational Emissions based on traffic data
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2005 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	5.15	3.05	64.95	0.01	0.72	0.05	0.67

*** 2006 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	3,494.08	4.02	101.26	0.02	1.44	0.10	1.34

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	45.87	16.98	18.46	0.00	0.05

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	105.65	96.12	967.50	0.62	105.30

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	151.52	113.10	985.97	0.62	105.34

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\Operational with Traffic Data.urb
Project Name: Operational Emissions based on traffic data
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

CONSTRUCTION EMISSION ESTIMATES

*** 2005 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	5.15	3.05	64.95	0.01	0.72	0.05	0.67

*** 2006 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	3,494.08	4.02	101.26	0.02	1.44	0.10	1.34

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	45.00	18.99	12.42	0.01	0.20

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	107.32	143.04	1,176.56	0.62	105.30

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	152.32	162.04	1,188.98	0.63	105.50

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\Operational with Traffic Data.urb
Project Name: Operational Emissions based on traffic data
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.26	16.88	11.52	0	0.03
Hearth	0.12	2.12	0.90	0.01	0.17
Landscaping - No winter emissions					
Consumer Prdcts	41.58	-	-	-	-
Architectural Coatings	2.04	-	-	-	-
TOTALS(lbs/day,unmitigated)	45.00	18.99	12.42	0.01	0.20

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Apartments high rise - Ri	12.67	18.92	149.41	0.09	14.70
Apartments high rise - Wa	23.70	35.40	279.54	0.16	27.50
Day-care center - River 3	0.89	0.89	8.36	0.00	0.56
High turnover (sit-down)	5.18	5.18	48.51	0.02	3.24
Hotel - River 1	9.07	11.87	98.17	0.05	8.59
Regnl shop. center - Wash	10.84	13.61	114.70	0.06	9.65
Shopping Center - River 3	4.69	5.47	47.64	0.02	3.74
Shopping Center - River 1	5.44	6.33	55.19	0.03	4.33
Convenience market with g	0.57	0.52	5.08	0.00	0.30
General office building -	12.96	18.94	148.88	0.08	14.51
General office building -	21.30	25.92	221.06	0.11	18.19
TOTAL EMISSIONS (lbs/day)	107.32	143.04	1,176.56	0.62	105.30

Includes correction for passby trips.
Includes the following double counting adjustment for internal trips:
Residential trips: 0.00% reduction. Nonresidential trips: 0.00% reduction.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Apartments high rise - Ri	1.53	6.33 trips/dwelling unit	300.00	1,899.00
Apartments high rise - Wa	6.05	6.46 trips/dwelling unit	550.00	3,553.00
Day-care center - River 3		65.05 trips/1000 sq. ft.	3.00	195.15
High turnover (sit-down)		53.83 trips/1000 sq. ft.	21.00	1,130.49
Hotel - River 1		5.88 trips/rooms	300.00	1,763.10

Regnl shop. center - Wash	54.48	trips/1000 sq. ft.	40.00	2,179.00
Shopping Center - River 3	65.05	trips/1000 sq. ft.	15.00	975.75
Shopping Center - River 1	53.83	trips/1000 sq. ft.	21.00	1,130.49
Convenience market with g	65.05	trips/1000 sq. ft.	2.00	130.10
General office building -	8.62	trips/1000 sq. ft.	245.00	2,110.92
General office building -	7.01	trips/1000 sq. ft.	600.00	4,207.20

Sum of Total Trips 19,274.21
Total Vehicle Miles Traveled 69,319.52

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.7	3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			

% of Trips - Commercial (by land use)

Day-care center - River 3	5.0	2.5	92.5

High turnover (sit-down) rest. - River 1	5.0	2.5	92.5
Hotel - River 1	5.0	2.5	92.5
Regnl shop. center - Wash St.	2.0	1.0	97.0
Shopping Center - River 3	2.0	1.0	97.0
Shopping Center - River 1	2.0	1.0	97.0
Convenience market with gas pumps - River 3	2.0	1.0	97.0
General office building - River 1	35.0	17.5	47.5
General office building - River 3	10.0	5.0	85.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Apartments mid rise
have changed from the defaults 5.76/7.89 to 6.33/1.53
The Trip Rate and/or Acreage values for Apartments high rise
have changed from the defaults 5.29/8.87 to 6.46/6.05

Changes made to the default values for Construction

Changes made to the default values for Area

The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 45.
The no hearth options percentage changed from 0 to 55.
The landscape year changed from 2005 to 2012.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0013.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0013.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The double counting option switch changed from off to on.
The operational emission year changed from 2005 to 2010.

URBEMIS 2002 For Windows 8.7.0

File Name: P:\2005\05110023.01 Raley's Landing\Air Quality\URBEMIS Runs\Operational with Traffic Data.urb
Project Name: Operational Emissions based on traffic data
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.26	16.88	11.52	0	0.03
Hearth - No summer emissions					
Landscaping	0.99	0.10	6.94	0.00	0.01
Consumer Prdcts	41.58	-	-	-	-
Architectural Coatings	2.04	-	-	-	-
TOTALS(lbs/day,unmitigated)	45.87	16.98	18.46	0.00	0.05

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Apartments high rise - Ri	13.40	12.62	130.98	0.09	14.70
Apartments high rise - Wa	24.95	23.61	245.05	0.16	27.50
Day-care center - River 3	0.69	0.61	6.03	0.00	0.56
High turnover (sit-down)	4.04	3.55	34.98	0.02	3.24
Hotel - River 1	10.16	8.00	77.96	0.05	8.59
Regnl shop. center - Wash	8.54	9.20	89.16	0.06	9.65
Shopping Center - River 3	3.64	3.71	36.06	0.02	3.74
Shopping Center - River 1	4.26	4.30	41.77	0.03	4.33
Convenience market with g	0.44	0.36	3.49	0.00	0.30
General office building -	12.87	12.66	128.76	0.09	14.51
General office building -	22.67	17.52	173.26	0.11	18.19
TOTAL EMISSIONS (lbs/day)	105.65	96.12	967.50	0.62	105.30

Includes correction for passby trips.
Includes the following double counting adjustment for internal trips:
Residential trips: 0.00% reduction. Nonresidential trips: 0.00% reduction.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85   Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Apartments high rise - Ri	1.53	6.33 trips/dwelling unit	300.00	1,899.00
Apartments high rise - Wa	6.05	6.46 trips/dwelling unit	550.00	3,553.00
Day-care center - River 3		65.05 trips/1000 sq. ft.	3.00	195.15
High turnover (sit-down)		53.83 trips/1000 sq. ft.	21.00	1,130.49
Hotel - River 1		5.88 trips/rooms	300.00	1,763.10

Regnl shop. center - Wash	54.48	trips/1000 sq. ft.	40.00	2,179.00
Shopping Center - River 3	65.05	trips/1000 sq. ft.	15.00	975.75
Shopping Center - River 1	53.83	trips/1000 sq. ft.	21.00	1,130.49
Convenience market with g	65.05	trips/1000 sq. ft.	2.00	130.10
General office building -	8.62	trips/1000 sq. ft.	245.00	2,110.92
General office building -	7.01	trips/1000 sq. ft.	600.00	4,207.20

Sum of Total Trips 19,274.21
Total Vehicle Miles Traveled 69,319.52

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.7	3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			

% of Trips - Commercial (by land use)

Day-care center - River 3	5.0	2.5	92.5

High turnover (sit-down) rest. - River 1	5.0	2.5	92.5
Hotel - River 1	5.0	2.5	92.5
Regnl shop. center - Wash St.	2.0	1.0	97.0
Shopping Center - River 3	2.0	1.0	97.0
Shopping Center - River 1	2.0	1.0	97.0
Convenience market with gas pumps - River 3	2.0	1.0	97.0
General office building - River 1	35.0	17.5	47.5
General office building - River 3	10.0	5.0	85.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Apartments mid rise have changed from the defaults 5.76/7.89 to 6.33/1.53
The Trip Rate and/or Acreage values for Apartments high rise have changed from the defaults 5.29/8.87 to 6.46/6.05

Changes made to the default values for Construction

Changes made to the default values for Area

The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 45.
The no hearth options percentage changed from 0 to 55.
The landscape year changed from 2005 to 2012.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0013.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0013.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The double counting option switch changed from off to on.
The operational emission year changed from 2005 to 2010.

APPENDIX E

NOISE DATA

Existing Conditions

Existing Conditions

RUN NAME: F ST WEST OF 8TH ST   RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS			
	68.62	11.20	8.49
M-TRUCKS			
	7.38	1.20	0.91
H-TRUCKS			
	1.17	0.28	0.21

ADT: 1479   SPEED: 25   ACTIVE HALF WIDTH (FT): 10
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.42
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	63.9

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 3RD ST BETWEEN G ST AND W. CAPITOL AVE.   RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	68.62	11.20	8.49
M-TRUCKS	7.38	1.20	0.91
H-TRUCKS	1.17	0.28	0.21

ADT: 4316   SPEED: 25   ACTIVE HALF WIDTH (FT): 22
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.11
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	63.7	130.6

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 4TH ST BETWEEN F ST AND E ST RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.62	11.20	8.49
M-TRUCKS			
	7.38	1.20	0.91
H-TRUCKS			
	1.17	0.28	0.21

ADT: 115 SPEED: 25 ACTIVE HALF WIDTH (FT): 10.5
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 44.28
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 5TH ST BETWEEN F ST AND E ST RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.62	11.20	8.49
M-TRUCKS			
	7.38	1.20	0.91
H-TRUCKS			
	1.17	0.28	0.21

ADT: 5144 SPEED: 25 ACTIVE HALF WIDTH (FT): 24
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.73
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	71.3	146.6

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 5TH ST BETWEEN G ST AND W CAPITOL AVE   RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	68.62	11.20	8.49
M-TRUCKS	7.38	1.20	0.91
H-TRUCKS	1.17	0.28	0.21

ADT: 6051   SPEED: 25   ACTIVE HALF WIDTH (FT): 23.25
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.49
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	78.4	162.9

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 4TH ST BETWEEN G ST AND W CAPITOL AVE RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.62	11.20	8.49
M-TRUCKS			
	7.38	1.20	0.91
H-TRUCKS			
	1.17	0.28	0.21

ADT: 145 SPEED: 25 ACTIVE HALF WIDTH (FT): 9.5
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 45.38
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: F ST BETWEEN 5TH ST AND 6TH ST RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.62	11.20	8.49
M-TRUCKS			
	7.38	1.20	0.91
H-TRUCKS			
	1.17	0.28	0.21

ADT: 1367 SPEED: 25 ACTIVE HALF WIDTH (FT): 11
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.99
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	60.9

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: W CAPITOL AVE WEST OF 5TH ST RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.62	11.20	8.49
M-TRUCKS			
	7.38	1.20	0.91
H-TRUCKS			
	1.17	0.28	0.21

ADT: 6295 SPEED: 30 ACTIVE HALF WIDTH (FT): 15
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.96
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	100.8	215.2

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 3RD ST BETWEEN F ST AND E ST   RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS	68.62	11.20	8.49
M-TRUCKS	7.38	1.20	0.91
H-TRUCKS	1.17	0.28	0.21

ADT: 2621   SPEED: 25   ACTIVE HALF WIDTH (FT): 11.25
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 57.79
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
-------	-------	-------	-------
0.0	0.0	0.0	93.1

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: G ST BETWEEN 5TH ST AND 6TH ST RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.62	11.20	8.49
M-TRUCKS			
	7.38	1.20	0.91
H-TRUCKS			
	1.17	0.28	0.21

ADT: 198 SPEED: 25 ACTIVE HALF WIDTH (FT): 9.5
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 46.74
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: SR275 BETWEEN 3RD ST AND 5TH ST   RUN DATE: 063005
SCENARIO: Existing Conditions

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.62	11.20	8.49
M-TRUCKS			
	7.38	1.20	0.91
H-TRUCKS			
	1.17	0.28	0.21

ADT: 10900   SPEED: 65   ACTIVE HALF WIDTH (FT): 28.5
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 72.02
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
103.7	216.6	463.3	996.6

DO YOU WANT A HARD COPY? (Y/N)

Existing Conditions

RUN NAME: I5/SR99 BTWN I ST AND P/Q ST EXITS   RUN DATE: 070605

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	68.62	11.20	8.49
M-TRUCKS	7.38	1.20	0.91
H-TRUCKS	1.71	0.28	0.21

ADT: 176000   SPEED: 55   ACTIVE HALF WIDTH (FT): 52
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 81.32
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
501.2	1075.1	2313.6	4982.6

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: I5/SR99 BTWN I ST AND P/Q ST EXITS   RUN DATE: 070605

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	68.62	11.20	8.49
M-TRUCKS	7.38	1.20	0.91
H-TRUCKS	1.71	0.28	0.21

ADT: 176000   SPEED: 55   ACTIVE HALF WIDTH (FT): 52
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

BARRIER TYPE:NONE
CNEL AT 1200 FT FROM CL WITHOUT BARRIER: 63.33783721923828

DO YOU WANT A HARD COPY? (Y/N)

Existing Plus Project Conditions

Existing + Project

RUN NAME: F ST WEST OF 8TH ST RUN DATE: 081705
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.15	11.12	8.43
M-TRUCKS			
	7.69	1.26	0.95
H-TRUCKS			
	1.87	0.30	0.23

ADT: 1880 SPEED: 25 ACTIVE HALF WIDTH (FT): 10
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 56.91
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	80.0

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 3RD ST BETWEEN G ST AND W. CAPITOL AVE.   RUN DATE: 081705
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS	68.15	11.12	8.43
M-TRUCKS	7.69	1.26	0.95
H-TRUCKS	1.87	0.30	0.23

ADT: 11910   SPEED: 25   ACTIVE HALF WIDTH (FT): 22.5
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.93
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
-------	-------	-------	-------
0.0	62.6	127.9	272.1

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 4TH ST BETWEEN F ST AND E ST RUN DATE: 081705
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.15	11.12	8.43
M-TRUCKS			
	7.69	1.26	0.95
H-TRUCKS			
	1.87	0.30	0.23

ADT: 660 SPEED: 25 ACTIVE HALF WIDTH (FT): 10.5
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 52.32
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 5TH ST BETWEEN F ST AND E ST RUN DATE: 063005
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.15	11.12	8.43
M-TRUCKS			
	7.69	1.26	0.95
H-TRUCKS			
	1.87	0.30	0.23

ADT: 7600 SPEED: 25 ACTIVE HALF WIDTH (FT): 24
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.88
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	96.4	202.5

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 5TH ST BETWEEN G ST AND W CAPITOL AVE RUN DATE: 081705
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS	68.15	11.12	8.43
M-TRUCKS	7.69	1.26	0.95
H-TRUCKS	1.87	0.30	0.23

ADT: 7880 SPEED: 25 ACTIVE HALF WIDTH (FT): 23.25
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.08
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	98.4	207.3

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 4TH ST BETWEEN G ST AND W CAPITOL AVE RUN DATE: 081705
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS	68.15	11.12	8.43
M-TRUCKS	7.69	1.26	0.95
H-TRUCKS	1.87	0.30	0.23

ADT: 3680 SPEED: 25 ACTIVE HALF WIDTH (FT): 9.5
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.88
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	58.4	124.5

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: F ST BETWEEN 5TH ST AND 6TH ST   RUN DATE: 081705
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	68.15	11.12	8.43
M-TRUCKS			
	7.69	1.26	0.95
H-TRUCKS			
	1.87	0.30	0.23

ADT: 1760   SPEED: 25   ACTIVE HALF WIDTH (FT): 11
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 56.54
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
-------	-------	-------	-------
0.0	0.0	0.0	76.7

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: W CAPITOL AVE WEST OF 5TH ST   RUN DATE: 081705
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	68.15	11.12	8.43
M-TRUCKS	7.69	1.26	0.95
H-TRUCKS	1.87	0.30	0.23

ADT: 8000   SPEED: 30   ACTIVE HALF WIDTH (FT): 15
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.41
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	59.7	125.4	268.6

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 3RD ST BETWEEN F ST AND E ST RUN DATE: 081705
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	68.15	11.12	8.43
M-TRUCKS	7.69	1.26	0.95
H-TRUCKS	1.87	0.30	0.23

ADT: 8280 SPEED: 25 ACTIVE HALF WIDTH (FT): 16.875
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.76
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	100.3	213.7

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: G ST BETWEEN 5TH ST AND 6TH ST   RUN DATE: 063005
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	68.15	11.12	8.43
M-TRUCKS	7.69	1.26	0.95
H-TRUCKS	1.87	0.30	0.23

ADT: 220   SPEED: 25   ACTIVE HALF WIDTH (FT): 9.5
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 47.64
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: SR275 BETWEEN 3RD ST AND 5TH ST   RUN DATE: 081705
SCENARIO: Existing + Project

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	68.15	11.12	8.43
M-TRUCKS	7.69	1.26	0.95
H-TRUCKS	1.87	0.30	0.23

ADT: 14880   SPEED: 65   ACTIVE HALF WIDTH (FT): 28.5
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 73.63
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
130.7	276.3	592.7	1275.5

DO YOU WANT A HARD COPY? (Y/N)

Cumulative Plus Project (2025) Conditions

<u>Cumulative + Project (2025)</u>

RUN NAME: F ST WEST OF 8TH ST   RUN DATE: 081705
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	67.76	11.06	8.38
M-TRUCKS	8.24	1.34	1.02
H-TRUCKS	1.71	0.28	0.21

ADT: 3680   SPEED: 25   ACTIVE HALF WIDTH (FT): 10
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.77
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	58.0	123.5

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 3RD ST BETWEEN G ST AND W. CAPITOL AVE. RUN DATE: 081705
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS	67.76	11.06	8.38
M-TRUCKS	8.24	1.34	1.02
H-TRUCKS	1.71	0.28	0.21

ADT: 19170 SPEED: 25 ACTIVE HALF WIDTH (FT): 22.5
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.94
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	82.7	172.9	369.9

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 4^{TH} ST BETWEEN F ST AND E ST RUN DATE: 081705
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	67.76	11.06	8.38
M-TRUCKS			
	8.24	1.34	1.02
H-TRUCKS			
	1.71	0.28	0.21

ADT: 740 SPEED: 25 ACTIVE HALF WIDTH (FT): 10.5
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 52.76
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 5^{TH} ST BETWEEN F ST AND E ST RUN DATE: 081705
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	67.76	11.06	8.38
M-TRUCKS			
	8.24	1.34	1.02
H-TRUCKS			
	1.71	0.28	0.21

ADT: 15800 SPEED: 25 ACTIVE HALF WIDTH (FT): 24
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.00
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	74.0	152.6	325.4

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 5TH ST BETWEEN G ST AND W CAPITOL AVE   RUN DATE: 081705
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS	67.76	11.06	8.38
M-TRUCKS	8.24	1.34	1.02
H-TRUCKS	1.71	0.28	0.21

ADT: 21160   SPEED: 25   ACTIVE HALF WIDTH (FT): 23.25
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 66.32
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	88.1	184.5	395.0

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 4TH ST BETWEEN G ST AND W CAPITOL AVE RUN DATE: 081705
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	67.76	11.06	8.38
M-TRUCKS			
	8.24	1.34	1.02
H-TRUCKS			
	1.71	0.28	0.21

ADT: 5360 SPEED: 25 ACTIVE HALF WIDTH (FT): 9.5
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.45
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	74.0	158.4

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: F ST BETWEEN 5TH ST AND 6TH ST RUN DATE: 081705
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	67.76	11.06	8.38
M-TRUCKS	8.24	1.34	1.02
H-TRUCKS	1.71	0.28	0.21

ADT: 3760 SPEED: 25 ACTIVE HALF WIDTH (FT): 11
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.78
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	59.0	125.3

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: W CAPITOL AVE WEST OF 5TH ST   RUN DATE: 063005
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	67.76	11.06	8.38
M-TRUCKS	8.24	1.34	1.02
H-TRUCKS	1.71	0.28	0.21

ADT: 3020   SPEED: 30   ACTIVE HALF WIDTH (FT): 15
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.15
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	66.4	140.2

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: 3RD ST BETWEEN F ST AND E ST RUN DATE: 081705
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	67.76	11.06	8.38
M-TRUCKS			
	8.24	1.34	1.02
H-TRUCKS			
	1.71	0.28	0.21

ADT: 11040 SPEED: 25 ACTIVE HALF WIDTH (FT): 16.875
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.96
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	57.6	119.9	256.3

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: G ST BETWEEN 5^{TH} ST AND 6^{TH} ST   RUN DATE: 081705
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	67.76	11.06	8.38
M-TRUCKS			
	8.24	1.34	1.02
H-TRUCKS			
	1.71	0.28	0.21

ADT: 760   SPEED: 25   ACTIVE HALF WIDTH (FT): 9.5
SITE CHARACTERISTICS: SOFT   GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 52.97
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

DO YOU WANT A HARD COPY? (Y/N)

RUN NAME: SR275 BETWEEN 3RD ST AND 5TH ST RUN DATE: 081705
SCENARIO: Cumulative + Project (2025)

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-------	-----
AUTOS			
	67.76	11.06	8.38
M-TRUCKS			
	8.24	1.34	1.02
H-TRUCKS			
	1.71	0.28	0.21

ADT: 23160 SPEED: 65 ACTIVE HALF WIDTH (FT): 28.5
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 75.59
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
174.8	372.7	800.9	1724.2

DO YOU WANT A HARD COPY? (Y/N)

APPENDIX F

SB 610 WATER SUPPLY ASSESSMENT REPORT

City of West Sacramento
SB 610 Water Supply Assessment Report
Raley's Landing Project

Prepared for:

City of West Sacramento
Community Development Department

Prepared by:
EDAW
2022 J Street
Sacramento, CA 95814

August 2005

EDAW

City of West Sacramento
SB 610 Water Supply Assessment Report

Raley's Landing Project

Prepared for:

City of West Sacramento
Community Development Department
1110 West Capitol Avenue
West Sacramento, CA 95691

Contact: Jim Bermudez

Prepared by:

EDAW
2022 J Street
Sacramento, CA 95814

Contact: Sean Bechta
(916) 414-5800

August 2005

EDAW

P 05110023.01

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INTRODUCTION

Senate Bill 610 (SB 610) (Section 21151.9 of the California Public Resources Code and Section 10910 et seq. of the California Water Code) requires the preparation of “water supply assessments” for large developments (e.g., more than 500 dwelling units or nonresidential equivalent). These assessments, prepared by “public water systems” responsible for serving project areas (here the City of West Sacramento [City] itself), address whether adequate existing or projected water supplies are available to serve such projects, in addition to existing urban and agricultural demands and other anticipated development in the service area which the project is located. Where a water supply assessment concludes that insufficient supplies are available, the assessment must lay out the steps that would be required to obtain the necessary supply. Among other requirements, the assessment must identify the existing and future water suppliers and quantify water demand and supply by source in 5-year increments over a 20-year projection period. This information must be provided for average normal, single-dry, and multiple-dry years. The absence of an adequate current water supply does not preclude project approval but does require a lead agency to address a water supply shortfall in its project approval findings (California Department of Water Resources 2003).

Under SB 221, approval by a city or county of certain residential subdivisions, as defined by California Government Code Section 66473.7(a)(1), requires an affirmative written verification of sufficient water supply. SB 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. As a result of the information contained in the written verification, the city or county may attach conditions to assure that water supply is part of the map approval process.

The City would be the government agency providing water services to the Raley’s Landing project. The project would rely on surface water for all water demands, primarily in the form of diversions from the Sacramento River. As part of its consideration of the proposed project, the City is conducting an environmental review under the requirements of the California Environmental Quality Act (CEQA). The environmental review for the proposed project includes the need for an assessment of whether adequate water supplies are available to serve the project. The proposed project requires an SB 610 water supply assessment based on water demands equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project and a proposed commercial/retail center having more than 1,000 employees (Water Code Section 10912).

SB 610 and SB 221 provide a nexus between the regional land use planning process and the environmental review process. These laws also reflect the growing awareness of the need to incorporate water supply and demand analysis at the earliest possible stage in the land use planning process. As noted above, the core of these laws is an assessment of whether available water supplies are sufficient to serve the demand generated by a project, as well as the reasonably foreseeable cumulative demand in the region over the next 20 years under a range of hydrologic conditions. This assessment includes a determination as to whether the projected water supplies available would meet the water demand associated with the proposed project, in addition to the existing and planned future uses. Subsequently, this information may be used as part of the written verification of water supplies, as required under SB 221.

The Water Code requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet per annum (afa), prepare an Urban Water Management Plan (UWMP). This plan must be updated at least every 5 years on or before December 31, in years ending in 5 and 0. The City’s current UWMP was adopted in December 2000 and revised in July 2002. As required by law, a new update will be prepared for release in December 2005.

Whereas a UWMP evaluates water demand at a programmatic level for an entire service area of an urban water supplier, a water supply assessment evaluates specific needs of a proposed project in relation to existing, present, and future water demand and supply in the service area. This SB 610 water supply assessment will be based on information obtained from the UWMP (City of West Sacramento 2000). Additional information was obtained from the Water Master Plan (1994; updated 2005) (City of West Sacramento 2005), which evaluates the existing system, defines required improvements, and proposes new infrastructure to support the City's projected growth in the future.

CITY OF WEST SACRAMENTO BACKGROUND

The City of West Sacramento is located in eastern Yolo County and borders the Sacramento River. From 1990 to 2000, the population of West Sacramento increased from 28,898 to 31,615, or 8.6% over the 10-year period (U.S. Census Bureau 2002). The current population as of January 1, 2005, is estimated to be 40,206 (California Department of Finance 2005). By 2025, population in the City is projected to increase to 77,100 people (SACOG 2001).

The city is part of a four-county metropolitan area that includes Yolo County, Sacramento County, and portions of Placer County and El Dorado County. West Sacramento covers approximately 19 square miles; the city limits extend from the Sacramento River and Tule Lake Road on the north, to the Sacramento River on the east, Shangri-La Slough on the south, and the Yolo Bypass on the west. The City's water service area boundary is contiguous with the city limits.

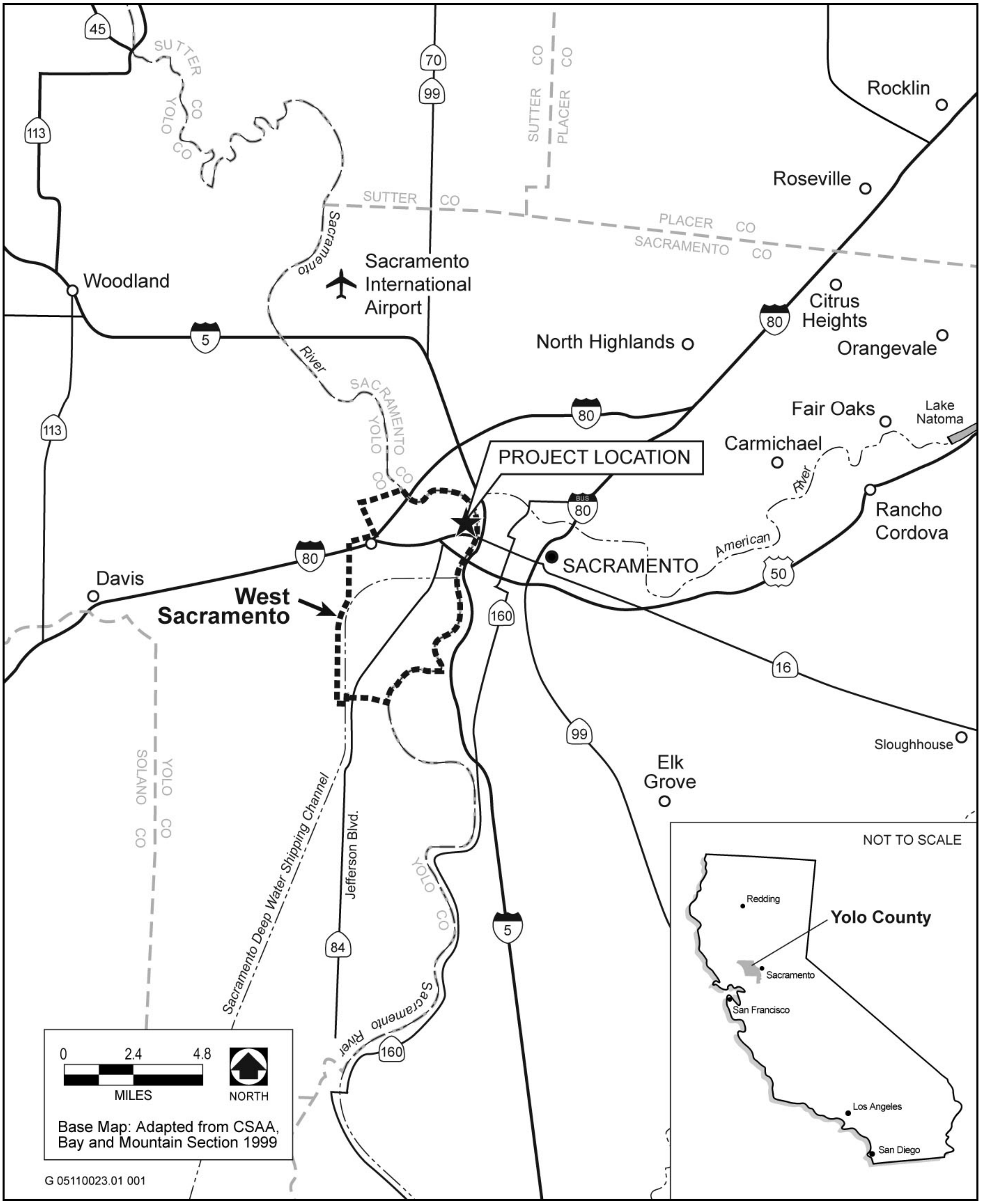
The area has a typical climate for the central Sacramento Valley, with precipitation averaging roughly 20 inches per year (primarily in the form of winter rains) and average high temperatures ranging in the upper 50s during the winter months and upper 90s during the dry summer months.

PROPOSED PROJECT DESCRIPTION

The City proposes to amend the Raley's Landing Development Agreement and Planned Development – 30 (PD-30) text to create a mixed-use development consisting of residential, commercial, office, and open-space features oriented toward the Sacramento River waterfront to the east and West Capitol Avenue to the south. The development, located in the northeastern portion of the city (Exhibit 1), would occupy 18.2 acres bordered by E and G Streets on the north; the Sacramento River on the east; West Capitol Avenue on the south; and Fifth, Fourth, and Third Streets on the west (Exhibit 2). At buildout, the proposed project would contain approximately 900 multifamily residential units, 845,000 gross square feet of office space, 102,000 gross square feet of commercial/retail uses, and possibly 100–300 hotel rooms with a 7,000- to 15,000-square-foot conference center; it would provide between 4,351 and 4,651 on-site parking spaces, including surface and multilevel parking spaces.

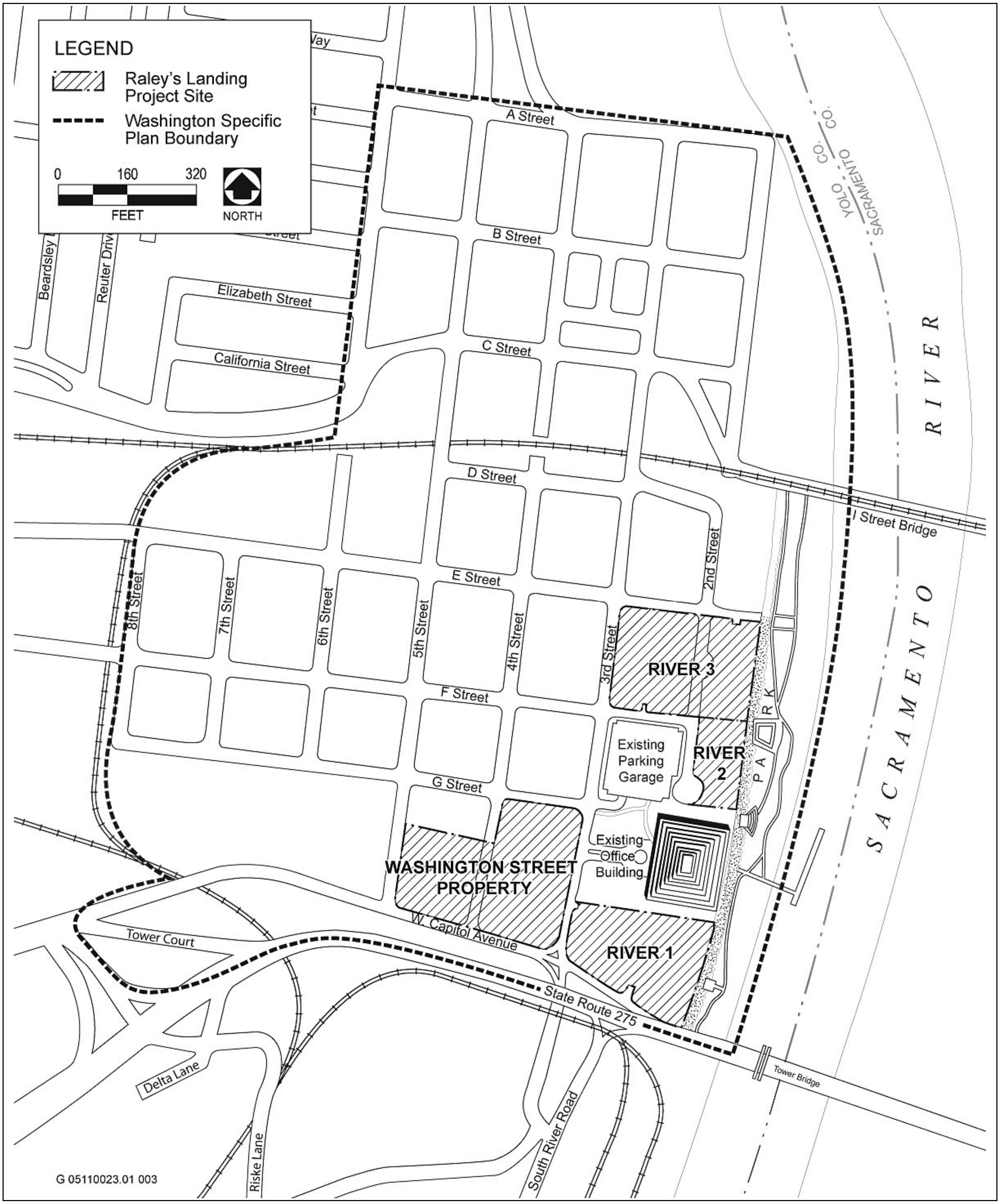
The proposed project is divided into four development areas: Washington Street and the River 1, River 2, and River 3 areas. The project components would be incorporated into these four areas as follows:

Washington Street: This area, identified as the Washington Street property, is bordered generally by G Street on the north, Third Street on the east, West Capitol Avenue on the south, and Fifth Street on the west. It is a planned mixed-use area combining retail and residential uses. Development on this property would be primarily residential, with 6.9 acres proposed for development of approximately 550 residential units in two phases. At buildout, the property would have 900–1,000 off-street parking spaces and a total of 40,000 square feet of retail uses.



Source: EDAW 2005

Regional Location Map **Exhibit 1**



Source: EDAW 2005

Project Location Map **Exhibit 2**

River 1: The River 1 area is bordered by the Ziggurat on the north, the Sacramento River on the east, the State Route 275 (SR 275) exit for West Capitol Avenue on the south, and Third Street on the west. This 4.6-acre parcel would be developed with a mixture of commercial, residential, and retail uses, including approximately 245,000 square feet of office space, 42,000 square feet of retail/restaurant uses, and one of the following two scenarios: 200 residential units or 100 residential units and a 100- to 300-room hotel with a 7,000- to 15,000-square-foot conference center. Between 1,000 and 1,200 parking spaces would be provided in the River 1 area.

River 2: The River 2 area is bordered by the River 3 area on the north, the Sacramento River on the east, the Ziggurat on the south, and Second Street on the west. Proposed development in the 1.2-acre River 2 area includes approximately 150 residential units and approximately 300 parking spaces.

River 3: The River 3 area is bordered by E Street on the north, the Sacramento River on the east, F Street and the River 2 area on the south, and Third Street on the west. Proposed development in the 5.6-acre River 3 area includes approximately 600,000 gross square feet of office space, 20,000 gross square feet of commercial space, and 2,151 parking spaces.

EXISTING WATER SUPPLY AND DEMAND

Although the City has used groundwater in the past to meet demand, it now relies solely on surface water to meet demand. The City maintains and operates five groundwater wells; however, because of poor water quality in these wells, the City has made a decision to discontinue the use of groundwater and formally abandon these wells. As a result, groundwater supplies will not be considered part of West Sacramento's available water supplies, and no further discussion of groundwater or the groundwater basin is necessary in this assessment.

Surface water from the Sacramento River to meet demand is primarily in the form of diversions from the Sacramento River under agreement between the North Delta Water Agency (NDWA) and the State of California; an appropriative water right entitlement (Permit 18150), issued to the City by the State Water Resources Control Board (State Water Board); and a 40-year contract with the U.S. Bureau of Reclamation (USBR) for delivery of Central Valley Project (CVP) supplies. The following section summarizes existing water supply entitlements and water rights, historic water use, and existing water facilities and demand in West Sacramento. Additionally, a discussion of existing water supply facilities on the proposed Raley's Landing site and in the project vicinity is provided below.

WATER SUPPLY ENTITLEMENTS AND WATER RIGHTS

Water Code Section 10910(d)(1) states:

> The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights or water service contracts.

The State Water Board is charged with coordinating the water rights and water quality functions of the state, as well as managing the Water Code. The Water Code applies only to surface water resources, and those "subterranean streams flowing through known and identifiable channels [Section 1200]." According to the State Water Board, however, "California law also recognizes and protects rights to extract and use waters percolating beneath the surface of the land. Again, while the Water Code implies the existence of these groundwater rights, their doctrinal bases and characteristics are essentially the product of the decisions of our courts." Most of West Sacramento is located within the boundaries of the NDWA area; therefore, water supplies for these sections of the city are guaranteed by the contract between NDWA and the State of California. The remainder of West Sacramento receives surface water from the Sacramento River under two entitlements: an appropriative water right (Permit 18150, issued by the State Water Board) and a contract with USBR. These entitlements are summarized in Table 1 below.

Table 1
City of West Sacramento Surface Water Entitlements

Period of Use	Authority	Maximum Diversion
January to May	Water Rights Permit 18150	62 cfs
June	Water Rights Permit 18150 Central Valley Project contract	62 cfs No limit
July	Central Valley Project contract	No limit
August	Central Valley Project contract	No limit
September	Water Rights Permit 18150 Central Valley Project contract	62 cfs No limit
October to December	Water Rights Permit 18150	62 cfs
Annual	Water Rights Permit 18150 Central Valley Project contract (maximum combined diversions, including diversions authorized by Water Rights Permit 18150)	18,350 afa[1] 23,600 afa[2]

Notes: afa = acre-feet per annum; cfs = cubic feet per second.

[1] Water Rights Permit 18150 limits maximum diversions from the Sacramento River to 18,350 afa.

[2] The Central Valley Project contract required minimum deliveries to the City of 105 afa in Year 1 (1981) and 9,680 afa in Year 40 (2020) and limits the combined diversions from the Sacramento River to 23,600 afa.

Source: City of West Sacramento 2000

The CVP contract does not limit the maximum rate or months of diversion. However, the City is allowed to divert up to a combined 23,600 afa from the Sacramento River under the terms of its appropriative rights (Permit 18150) and USBR contract (CVP water). The total diversion right of 23,600 afa is equivalent to an annual average-day diversion of 21.1 million gallons per day (mgd).

STATE WATER RESOURCES CONTROL BOARD PERMIT 18150

The City holds an appropriative right for diversions from the Sacramento River under Permit 18150, which was issued by the State Water Board in 1981. Permit 18150 allows the City to divert up to 18,350 afa from the Sacramento River at the Bryte Bend Water Treatment Plant (WTP) intake structure. However, this permit also limits the diversion of water to the periods of January 1 through June 30, and September 1 through December 31 of each year (Table 1). In addition, the maximum instantaneous rate of diversion for municipal use under this permit is 62 cubic feet per second, which is equivalent to approximately 40 mgd. Under this permit, the City does not have the right to divert water during the high-demand months of July and August. Furthermore, this permit is subject to reduction by the State Water Board in the event of drought conditions and/or to meet downstream water quality objectives. In the permit, The State Water Board reserves the right to modify, reduce, or completely eliminate the authorized diversions because of variations in demand and hydrologic conditions in the Sacramento River Basin and/or to meet downstream water quality objectives in the Sacramento–San Joaquin River Delta. The City's appropriative rights under Permit 18150 were reduced 100% during the drought years of 1991 and 1992 between the months of June and October.

U.S. Bureau of Reclamation Contract No. 0-07-20-W0187

In 1980, the City entered into a 40-year agreement with USBR authorizing diversion from the Sacramento River as part of the CVP to "obtain a firm surface water supply during the summer months" (City of West Sacramento 2000). As shown in Table 1, the City is allowed to divert up to a combined 23,600 afa from the Sacramento River under its appropriative rights (Permit 18150) and CVP contract. The total diversion right of 23,600 afa is equivalent to an annual average-day diversion of 21.1 mgd. The CVP contract does not limit the maximum rate or months of diversion. The contract does, however, require the City to pay for specified percentages of diverted water during the months of June through September. Provisions in the contract allow for the renewal of the contract for successive periods, and to increase or decrease the amount of water available to the City. The contract also states that USBR will use all reasonable means to prevent shortages in the quantity of water available to the City. Under the drought conditions of 1992, CVP diversions were reduced by 75%, which is the maximum reduction the City has experienced.

North Delta Water Agency

A large portion of West Sacramento's surface water supplies are guaranteed under the contract between NDWA and the State of California. NDWA was formed in 1974 to protect the water resources in specific portions of Yolo, Solano, Sacramento, and San Joaquin Counties. In West Sacramento, the northern boundary for the NDWA area is the Union Pacific Railroad tracks; therefore, the NDWA area would include the proposed Raley's Landing project site. In 1981, a contract was negotiated with the state to ensure dependable water supplies in adequate quantity and quality for municipal, industrial, and agricultural purposes. This supply includes water from both the State Water Project (SWP) and CVP. In exchange for this assurance, NDWA has agreed to make annual payments to the State, which are subject to adjustments every 5 years. Payments to NWDA are made by all landowners within the NDWA area boundaries through annual tax assessments on their property.

The California Department of Water Resources (DWR) and NDWA developed a Memorandum of Understanding (MOU) in May 1998. The MOU states that the 1981 contract between DWR and NDWA remains in full effect. DWR has agreed in the MOU that if diversions were modified to achieve water flow objectives from the *Bay-Delta Water Quality Control Plan*, DWR would remain obligated to provide water to the NDWA area per the 1981 contract requirements.

During recent drought years, diversions from the Sacramento River by water purveyors in the NDWA area, including the City, were not reduced. A large portion of West Sacramento's surface water supply is assured under the NDWA contract even if its appropriative rights and CVP contract deliveries are reduced.

HISTORIC WATER USE

The City supplies water to various land use categories such as residential, commercial, industrial, schools, parks, and sports arena. The historical annual water production used by the City from 1986 through 1999 is summarized in Table 2.

As shown, there was little increase in annual water production between 1986 and 1991. There has been a regular increase in water use since 1990, with the exceptions of 1993, 1995, 1998, and 1999. One possible explanation may be changes in weather patterns for each year, such as late or early rainfall. Therefore, future demands will be based on normal conditions and may be slightly lower or higher than historical usage (City of West Sacramento 2000).

Table 2 Historic Water Production 1986–1999			
Year	Annual Production		Average Day (mgd)
	MG/yr	AF/yr	
1986	2,687	8,246	7.36
1987	2,579	7,915	7.07
1988	2,723	8,357	7.44
1989	2,705	8,302	7.41
1990	2,726	8,366	7.47
1991	2,789	8,559	7.64
1992	3,197	9,812	8.73
1993	2,917	8,952	7.99
1994	3,228	9,907	8.84
1995	3,153	9,677	8.64
1996	3,366	10,330	9.20
1997	3,425	10,511	9.38
1998	3,016	9,256	8.26
1999	3,390	10,404	9.29

Notes: AF/yr = acre-feet per year; MG/yr = million gallons per year; mgd = million gallons per day.
Source: City of West Sacramento 2000

EXISTING FACILITIES DEMAND IN THE CITY OF WEST SACRAMENTO

The City is permitted under Water Rights Permit 18150 and its USBR contract to withdraw an average of 21.1 mgd from the Sacramento River for use in the proposed project area. The Bryte Bend WTP diverts water from the Sacramento River at the plant's intake structure and provides the main source of treated water supply for West Sacramento. The Bryte Bend WTP currently has six distribution system storage reservoirs and two clearwells. The capacity of the treatment plant is 40 mgd (November through March) or 58 mgd (April through October) (City of West Sacramento 1996).

Water demands for the existing system were based on historic water production data from the Bryte Bend WTP. Specifically, water production data from the previous four years were compared to determine the average daily demand (ADD) and maximum daily demand (MDD) for existing conditions (Table 3).

Table 3 Demand Factors 2000–2004			
Year	Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	MDD Peaking Factor[1]
2000	9.69	18.69	1.93
2001	10.59	19.83	1.87
2002	10.73	20.50	2.00
2003	10.97	20.40	1.86
2004	13.1	23.89	1.82

Notes: mgd = million gallons per day; MDD = maximum daily demand.
[1] Ratio of Maximum Day Demand to Average Day Demand = MDD/ADD
Source: City of West Sacramento 2005

Year 2004 is used as the existing year because it is the last year with complete production data. Based on 2004 demands, the City had a municipal average demand of 13.1 mgd and a maximum demand of 23.89 mgd. The ADD for year 2004 is approximately 20% higher than year 2003 production. Reasons for this increase include new developments in Southport, establishment of new landscaping and lawns in Southport, higher pressures at the improved high-service pump station, and a very dry and warm spring.

EXISTING FACILITIES ON THE RALEY'S LANDING SITE AND IN THE PROPOSED PROJECT AREA

Because the project site is undeveloped, there are no water facilities within the project site boundary. In the project study area, an existing 16-inch diameter water line parallels Third Street and extends to the Northeast Water Storage Reservoir at B street and Fifth Street. Additional 4-, 6-, and 8-inch distribution lines parallel West Capitol Avenue, G Street, and Fourth Street (in the vicinity of the River 1 area and the Washington Street property) and E Street, F Street, and Second Street (in the vicinity of the River 2 and 3 areas) (City of West Sacramento 1996). Exhibit 3 shows existing water infrastructure in the proposed project area.

PROJECTED WATER DEMANDS FOR THE PROPOSED PROJECT

The most accurate projection of demand can be developed using water demand factors based on land use types. Presented below are projected water demands for the proposed project. The water demands for the proposed project site include water for domestic service to multifamily dwelling units, retail shops, offices, and possibly a hotel and conference center. The UWMP provides the average daily water demand based on land uses in West Sacramento.

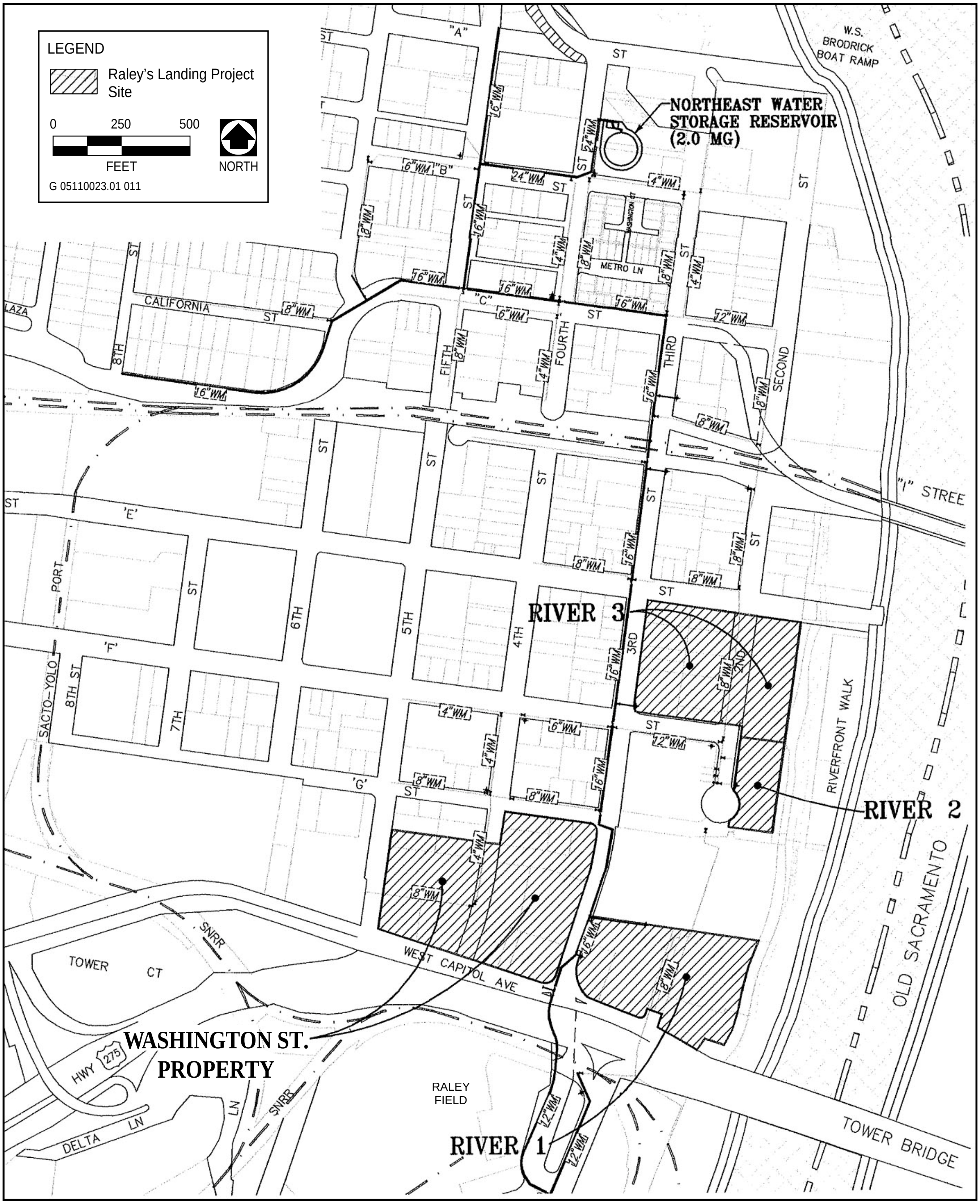
Table 4 shows the water supply required for the proposed project facilities. The table assumes development of 850 residential units and the hotel because this scenario would have a greater demand on water supply than development of 900 residential units and no hotel. A conservative approach was used in calculating the water demand of the hotel; it was assumed that water demand for each hotel room would be equivalent to demand from one multifamily residential dwelling unit.

Table 4
Estimated Water Demand for the Proposed Raley's Landing Project

Land Use	Dwelling Units	Acres	Unit Demand Factor	Total Water Demand (gpd)
Multifamily residential	850	0	290 gpd/du	246,500
Hotel	300	0	290 gpd/du	87,000
Commercial/office[1]	0	22.1[2]	2,950 gpd/ac	65,195
			Project Total	**398,695**

Notes: gpd/ac = gallons per day per acre; gpd/du = gallons per day per dwelling unit.
1 The commercial/office land use includes the 15,000-square-foot conference center.
2 Approximate acreage based on proposed square footage proposed for commercial and office land uses.
Source: City of West Sacramento 2000

As shown, the total water demand for the proposed project would be 398,695 gallons per day, or 0.40 mgd. The proposed project would increase water demand by approximately 3% over the city's current water use and would represent approximately 1% of the city's current surplus assured supply. Water demand at full buildout conditions of the proposed project are expected to remain relatively constant from year to year.



Source: Murray Smith & Associates 2005

Existing Water Infrastructure **Exhibit 3**

FUTURE WATER SUPPLY

Water demands for the distribution system were developed for ultimate buildout conditions. Buildout is defined as the condition when all the land within the city's boundaries is fully developed to its currently zoned land use. Buildout, based on City planners' projections, is assumed to occur in 2020.

The ultimate buildout demands were based on the land use category and the unit water demand factors, and average water use by each customer was established in the City's UWMP. Land use data were obtained from the City's General Plan, and the City's zoning map was used to calculate the area of each land use. By applying the densities and the demand factors to these land use categories, the total demands for the buildout conditions were calculated. Future demands are established based on the assumption that the City's current zoning land use information is a valid projection of buildout conditions.

FUTURE WATER SUPPLY IN THE CITY OF WEST SACRAMENTO

Water demands increase with an increase in development and with growth in the distribution system. Demand calculations determined that the total ADD and MDD for the city during the buildout year were projected to be 26.0 mgd and 52.0 mgd, respectively (City of West Sacramento 2005).

According to the UWMP, the quantity and quality of water supply in portions of West Sacramento lying in the NDWA area, including the proposed project area, is assured in all years. Because the supply is assured, the UWMP does not provide an analysis of water supply for average normal, single-dry, and multiple-dry years. As discussed above, a dependable water supply to West Sacramento is maintained through the SWP. During recent drought years, diversions from the Sacramento River by water purveyors in the NDWA area, including the city, were not reduced. The City's surface water supply is assured under the NDWA contract even if its appropriative rights and CVP contract deliveries are reduced. If surface water supply secured by Water Rights Permit 18150 is reduced 100% from June through October, and the USBR contract is reduced 75% during that same time, a sufficient supply to meet projected annual requirements should still be available through surface water provided pursuant to the NDWA contract. Therefore, the areas in the NDWA area would have a future assured water supply through 2020.

FUTURE WATER SUPPLY FOR THE PROPOSED PROJECT

The estimated water demand for the proposed project (0.40 mgd) is not expected to change substantially in the future. The project's water demand would be approximately 0.01% of the total demand (26.0 mgd) in 2020. In addition, because the project is within the NDWA area boundaries, water supply is assured to the proposed project area.

DETERMINATION OF ADEQUACY OF FUTURE SUPPLY

A finding can be made that there is an assured water supply for the proposed Raley's Landing project and for cumulative development in the NDWA area based on the analysis contained in the City's current UWMP. The project site is within the NDWA area boundaries, which assures the City's surface water supply under the NDWA contract even if its appropriative rights and CVP contract deliveries are reduced. Ample water supply (based on all available City water rights) is available to meet existing and future demand in the NDWA area.

The City will need to adopt this assessment as part of the environmental review for the proposed Raley's Landing project, including the findings described above. Section 10911(b) of the Water Code states, "The city or county shall include the water assessment provided pursuant to Section 10910, and any information provided pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code [i.e., CEQA]." Furthermore, Section

10911(c) states, “The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses.” Additionally, this project is subject to the changes in the Government Code resulting from SB 221. As a result, as a condition of the tentative subdivision map for the proposed project, the City will need to produce a written verification of available water supplies.

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APPENDIX G

CITY OF WEST SACRAMENTO TREE PRESERVATION ORDINANCE

WEST SACRAMENTO MUNICIPAL CODE

CHAPTER 8.24, TREE PRESERVATION

8.24.010 PURPOSE

It is recognized that the preservation of trees enhances the natural beauty of the city, sustains long-term potential increases in property values, maintains the environment, tempers the affect of extreme temperatures, creates the identity and quality of the city which is necessary for successful business to continue, improves the attractiveness of the city to visitors and increases the oxygen output of the area which is needed to combat air pollution. For these reasons, the city council finds that in order to promote the public health, safety and general welfare of the city, while at the same time recognizing individual rights to develop private property in a manner which will not be prejudicial to the public interest nor prohibit development of private property, it is necessary to enact regulations governing the removal and preservation of certain trees on private and public property within the city in addition to the planning and maintenance of street trees within new and already established developments. (Ord. 04-01 § 3 (part))

8.24.020 DEFINITIONS

As used in this chapter the following words and terms shall have the following meanings:

"City manager" means the city manager or his/her designated representative.

"Construction activity" means the incorporation of labor and materials to build any structure requiring a permanent or temporary location.

"Development project" means any project undertaken for the purpose of development, to include projects involving the issuance of a permit for construction or reconstruction but not a permit to operate.

"Drip line area" means the area measured from the trunk of the tree outward to a point at the perimeter of the outermost branch structure of the tree.

"Emergency" means an imminently dangerous condition of a tree or trees, and if such condition were abated according to the procedures set forth in this chapter requiring notice and an opportunity for a hearing, may, during the pendency of those proceedings subject the public, occupants, or neighbors, or the property of these persons to potential harm of a serious nature.

"Heritage tree" means any living tree with a trunk circumference of seventy-five inches or more or a native oak with a trunk circumference of fifty inches or more, both measured four feet six inches from ground level. The circumference of multi-trunk trees shall be based upon the sum of the circumference of each trunk.

"Landmark tree" means any tree or stand of trees that is especially prominent, stately or which is of historical significance as designated by the city council.

"Maintain" or "maintenance" means and includes major trimming or pruning and other similar acts which promotes the life, growth, health or beauty of trees, excepting only watering, unless specifically so stated. Major trimming and pruning means the removal of branches of five inches in diameter or greater.

"Native oak tree" means a living tree of any species of the Quercus genus (all oaks, including the nine native California oaks); for example, the interior live oak (*Quercus wislizenii*), valley oak, California white oak (*Quercus lobata*), or blue oak (*Quercus douglasii*.)

“Owner” means the legal owner of real property fronted upon any street shown on the last equalized assessment role.

“Public street” means any improved street, road, avenue, boulevard or parkway located within the city and dedicated to the public.

“Street tree” means and includes any tree growing or placed within the tree maintenance strip or public right of way.

“Tree” means any wooden perennial plant having one or several structural bearing trunk stems commonly achieving nine feet or more in height.

“Tree administrator” means the individual appointed by the city manager who, among other things, administers and enforces this chapter.

“Tree maintenance strip” means a strip of land parallel to a public street and adjacent thereto which is twelve and one-half feet wide, measured from the back of the curb of the street, or the edge of the paved portion of the street if the street does not have a curb at that location.

“Tree permit” means written authorization by the tree administrator to perform an activity on a street, heritage or landmark tree. (Ord. 04-01 § 3 (part))

8.24.030 RESPONSIBILITY

A. It is the responsibility of the property owner to maintain, in a proper fashion, all trees on his/her property. The property owner must ensure that the trees on his/her property do not pose a danger to his/her own property or the property of others.

B. Street trees, except those in a street center median, are the responsibility of the property owner of the adjacent property.

C. Property owners that do not properly maintain trees on their property or street trees for which they are responsible and, as a result, create an emergency, will be subject to the provisions of Section 8.24.120. (Ord. 04-01 § 3 (part))

8.24.040 STREET TREES--MAINTENANCE--PERMIT REQUIRED

Except as required in this chapter, it is unlawful for any person to perform any of the following acts with respect to street trees, without a tree permit issued by the tree administrator:

A. Plant any tree within a tree maintenance strip or public right of way, other than those species that are designated in the West Sacramento Landscape Development Guidelines;

B. Move, remove, cut down, poison, set fire to or permit fire to burn in proximity to or perform or fail to perform any act which results in the unnatural death or destruction of a street tree;

C. Perform any activity that will interfere with or retard the natural growth of any street tree;

D. Perform any work or permit any work to be performed within the drip line area of a street tree which would endanger the tree;

E. Trim or prune any branch of a street tree which is five inches in diameter or greater. (Ord. 04-01 § 3 (part))

8.24.050 Street Trees--Permit Exceptions--Utility Companies

A public utility shall not be prohibited from performing such acts with respect to street trees as may be necessary to make repairs, comply with applicable safety regulations or to avoid the interruption of services.

8.24.060 Landmark and Heritage Trees--Maintenance--Permit Required

It shall be unlawful to perform any of the following acts with respect to a landmark or heritage tree within the city limits without a tree permit issued by the tree administrator.

A. Move, remove, cut down, poison, set fire to or permit fire to burn in proximity to or perform or fail to perform any act which results in the unnatural death or destruction of a landmark or heritage tree;

B. Perform any activity that will interfere with or retard the natural growth of any landmark or heritage tree;

C. Perform any work or permit any work to be performed within the drip line area of a landmark or heritage tree which would endanger the tree;

D. Trim or prune any branch of a landmark or heritage tree which is five inches in diameter or greater. (Ord. 04-01 § 3 (part))

8.24.070 Landmark, Heritage and Street Trees--Construction--Permit Required

During construction activity on any property upon which a landmark, heritage or street tree is located, it is unlawful for any person to perform any of the following acts without a tree permit issued by the tree administrator, which permit shall not be denied if the activities are deemed necessary for the project and proper care is taken to protect any landmark, heritage or street tree:

A. Change the appropriate amount of irrigation or drainage water provided to any landmark, heritage or street tree;

B. Trench, grade pave or otherwise damage or disturb any exposed roots within one foot outside the drip line area of any landmark, heritage or street tree;

C. Park or operate any motor vehicle within one foot outside the drip line area of any landmark, heritage or street tree;

D. Place or store any equipment or construction materials within one foot outside the dripline area of any landmark, heritage or street tree;

E. Place, apply or attach any signs, ropes, cables or any other items to any landmark, heritage or street tree;

F. Cut or trim any branch of any landmark, heritage or street tree that is five inches in diameter or greater;

G. Place or allow to flow any oil, fuel, concrete mix or other deleterious substance into or over within one foot outside the drip area of any landmark, heritage or street tree. (Ord. 04-01 § 3 (part))

8.24.080 Tree Permit--Application--Process--Decision

A. Any person seeking to perform any activity on a landmark, heritage or street tree shall contact the tree administrator to discuss to proposed activity and if deemed necessary, the tree administrator will inspect the site of the proposed activity. After initial consultation between the applicant and the tree administrator, the tree administrator shall confirm whether or not a permit is required. If it is determined that a permit is required, the applicant shall apply for a permit. The application shall be signed by the property owner or his/her authorized agent.

B. The application shall contain the following information:

1. Location, size and species of the tree;

2. The type of activity for which the permit is sought;

3. A statement of the reasons for the activity;

4. Funds for an arborists report if applicable;

5. For a development project the tree plan as provided by Section 8.24.090;

6. And such pertinent information as the tree administrator may require.

C. In reaching a decision to grant or deny a tree permit, the tree administrator shall take into account the following:

1. The condition of the tree with respect to disease, general health, damage public nuisance danger of falling, proximity to existing or proposed structures and interference with utility services, and whether or not the tree acts as host for a plant which is parasitic. If the removal of the tree is requested for this reason, a written evaluation of the health and status of the tree(s), by an I.S.A Certified Arborist, may be commissioned by the tree administrator. The person requesting removal of the tree shall be responsible for the cost of the arborist report.

2. The number of existing trees in the area and the effect of any proposed removal upon the public health and safety, or the prosperity, beauty and general welfare of the area.

3. Mitigation measures as proposed or replacement measures as required.

4. Steps to avoid or minimize removal and destruction of trees.

5. The adverse impacts on the future development of the site, including the increased costs of development and construction, the reduction in the size of the proposed structure or structures and other adverse economic impacts on the landowner or developer.

6. The zoning of the property and the immediate and future impacts based on the granting or denial of the permit.

D. The tree administrator shall render a decision granting or denying the application for a tree permit within thirty days from the date the completed application is received. As a condition of granting a tree permit the tree administrator may require that the work be performed by a person who, in the opinion of the tree administrator, is qualified by education or experience to perform the work and holds a valid business license issued by the city for such purpose. Decisions made by the tree administrator are subject to appeal pursuant to the procedures set forth in Section 8.24.140. If the tree administrator fails to make a decision in thirty days, it will be assumed that the tree permit has been denied and the applicant will be granted an appeal hearing before the hearing officer at no cost to the applicant.

E. If a permit is granted to remove the tree(s), a copy of the tree permit shall be posted in a conspicuous location on the property near the tree during the removal of the tree. The tree contractor removing the tree(s) shall provide the tree administrator proof of current liability insurance prior to final issuance of the tree permit. (Ord. 04-01 § 3 (part))

8.24.084 REMOVAL OF TREES--MITIGATION AND REPLACEMENT

A. **Heritage or Landmark Trees**. When the tree administrator has granted a tree permit to remove a heritage or landmark tree said permit shall require the applicant to replace the tree with a living tree on the property or within the city of West Sacramento in a location approved by the tree administrator. Said location will be specified in the tree permit. The property owner will replace the tree and continue to replace the replacement tree if the tree dies any time within three years of the initial planting. Replacement shall not be required if a tree is in need of removal solely because it poses a risk to persons or property or if the tree acts as a host for a plant that is parasitic.

   Replacement trees will be planted at the rate of one inch diameter of replacement plant for every one inch diameter of tree removed. A diameter shall be measured at four feet six inches from ground level. Replacement trees may be a combination of fifteen gallon size trees, which are the equivalent of a one inch diameter tree or twenty-four inch box trees which are the equivalent of a three inch diameter tree.

   If the property owner is unable to replace the tree on his/her property or within an area approved by the tree administrator, the tree administrator shall require the property owner to pay an in-lieu fee to the city. An in-lieu fee payment shall not be required if the tree is in need of removal solely because it poses a risk to persons or property or if the tree acts as a host for a plant that is parasitic. Such fees shall be set by city council resolution and be used for the purpose of purchasing and planting trees elsewhere in the city of West Sacramento.

B. **Street Trees**. When the tree administrator has granted a tree permit to remove a street tree, said permit shall require the permittee to replace the tree. The permittee shall provide the replacement tree of a size and species pursuant to the city of West Sacramento Landscape Development Guidelines and plant said tree in the location specified by the tree administrator in the tree permit. The minimum replacement tree size should be at least fifteen gallons and shall be planted in accordance with the guidelines set forth in the West Sacramento Landscape Development Guidelines.

   In the event a street tree also meets the definition of a heritage or landmark tree then the replacement guidelines shall be those specified for heritage and landmark trees.

C. Development. Trees removed as a result of a development project shall be replaced in accordance with the replacement schedule set forth for landmark, heritage and street trees. Tree plantings required for the replacement of removed trees shall be in addition to those required as a condition of a development project pursuant to the West Sacramento Landscape Development Guidelines. (Ord. 04-01 § 3 (part))

8.24.090 DEVELOPMENT PROJECTS--TREE PLAN

Any application for a development project shall be accompanied by a tree plan containing the following information:

A. Contour map showing the location, size, species and condition of all existing trees which are located on the property proposed for development;

B. Identification of those trees which the applicant proposes to preserve and those heritage, landmark and street trees which are proposed to be removed and the reason for such removal;

C. A description of measures to be followed to ensure survival of heritage, landmark and street trees during construction;

D. A program for the preservation of heritage, landmark and street trees during and after completion of the project which shall include the following:

   1. Each tree or group of trees to be preserved shall be enclosed with a fence prior to any grading, movement of heavy equipment, approval of improvement plans or the issuance of any permits and such fence shall be removed following construction but prior to installation of landscaping material.

   2. Fencing shall be located one foot outside of dripline of the tree or trees and shall be a minimum of six feet in height.

   3. Signs shall be posted on all sides of fences surrounding each tree stating that each tree is to be preserved;

   4. Any and all exposed roots shall be covered with a protective material during construction.

E. A program for the replacement of any trees proposed to be removed. Said program shall be in conformance with Section 8.24.084. (Ord. 04-01 § 3 (part))

8.24.100 Liability

This chapter shall not be construed to impose any liability upon the city, its officers or employees for the performance of any act or the failure to perform any act under this chapter, and shall not relieve the owner from the duty to keep any tree upon his or her property in such condition as to prevent it from causing damage or constituting a nuisance. By enactment of this chapter the city is not assuming responsibility for the maintenance of heritage, landmark or street trees nor relieving the property owner of the duty to maintain such trees at his or her own expense. (Ord. 04-01 § 3 (part))

8.24.110 Abatement of Dangerous Condition

A. An owner is not precluded by this chapter from taking action, in the event of an emergency, which action would otherwise violate the terms of this chapter, if such action is necessary to minimize a dangerous condition. In the event such emergency action is taken, the owner shall notify the tree administrator the next working day.

B. In the event that an owner has not properly maintained trees for which the owner is responsible and the trees pose an imminent danger to persons and/or property, constituting an emergency the tree administrator shall refer the matter to the chief of police for commencement of summary abatement pursuant to Section 19.05.003 of the municipal code. At the owner’s expense, cause the tree to be removed or have the dangerous condition otherwise rectified.

C. In the event that an owner has not properly maintained trees for which the owner is responsible and the trees and the condition does not pose an imminent threat to persons and/or property but has the potential to pose such a threat, the tree administrator shall give the owner thirty days to eliminate the potentially dangerous condition. If the condition has not changed in thirty days the tree administrator shall refer the matter to the chief of police for the commencement of abatement pursuant to Section 19.05.004 of the municipal code. (Ord. 04-01 § 3 (part))

8.24.120 Stop-work Order

Whenever the tree administrator determines that an action being taken is in conflict with this chapter he shall cause there to be issued a stop work order, which shall prohibit such action. Such stop work order shall set forth the alleged violations and may list remedies to be taken to correct the violations. The person receiving the stop work order shall be required to report in writing to the tree administrator within forty-eight hours regarding the steps to be taken to correct the violations or to appeal the posting of the stop work order. The stop work order shall remain in effect until a finding is made that the circumstances giving the rise to its order no longer exist. Any party receiving a stop work order may appeal through the process outlined in Section 8.24.140. (Ord. 04-01 § 3 (part))

8.24.130 APPEALS

Any person dissatisfied with any decision of the tree administrator made under this chapter may appeal such decision to the city's hearing officer. The process for appeal is set forth in Chapter 1.08 of the municipal code. (Ord. 04-01 § 3 (part))

8.24.140 VIOLATION--PENALTY

Any person, corporation or other legal entity that violates or fails to comply with any provision of this chapter is guilty of a misdemeanor. Any person, corporation or other legal entity convicted of a misdemeanor for violation of this chapter is punishable for a fine of not more than one thousand dollars, or by imprisonment not to exceed six months, or both. Each person, corporation or other legal entity is guilty of a separate offense for each and every tree each and every day, during any portion of which violation of this chapter is committed, continued or permitted by any such person, corporation or legal entity; and such person, corporation or legal entity shall be punished accordingly.

In addition to the general penalty set forth above, any condition caused or permitted to exist in violation of this chapter shall be deemed a public nuisance and may be abated by the city in accordance with Title 19 of the municipal code, and other applicable provisions of law. Each day such condition continues shall be regarded as a new and separate offense. In any abatement action the remedies ordered may include, but need not be limited to, compliance with the mitigation and replacement requirements as set forth in Section 8.24.084. (Ord. 04-01 § 3 (part))

APPENDIX H

PLANT SPECIES OBSERVED AT THE RALEY'S LANDING PROJECT SITE

Plant Species Observed at the Raley's Landing Project Site	
Scientific Name	Common Name
Acer negundo	Boxelder
Ailanthus altissima	Tree of heaven
Avena fatua	Wild oats
Bromus carinatus	California brome
Bromus diandrus	Ripgut brome
Bromus madritensis ssp. *rubens*	Red brome
Calocedrus decurrens	Incense cedar
Centaurea solstitialis	Yellow star-thistle
Cirsium arvense	Canada thistle
Citrus sp.	Orange
Cupressus glabra	Smooth Arizona cypress
Cynodon dactylon	Bermuda grass
Epilobium brachycarpum	Panicle willowherb
Eriobotrya japonica	Loquat
Erodium botrys	Whitestem filaree
Erodium cicutarium	Restem filaree
Fraxinus latifolia	Oregon ash
Galium aparine	Sticky bedstraw
Geranium dissectum	Cutleaf geranium
Hedera helix	English ivy
Hordeum marinum ssp. *gussoneanum*	Barley
Hypochaeris radicata	Rough cat's ear
Juglans hindsii	California black walnut
Juglans regia	English walnut
Lactuca serriola	Prickly lettuce
Lupinus bicolor	Miniature lupine
Magnolia grandiflora	Southern magnolia
Malva neglecta	Cheeseweed
Medicago polymorpha	Black medic
Morus sp.	Mulberry
Oxalis pes-caprae	Bermuda buttercup
Pinus halepensis	Aleppo pine

Plant Species Observed at the Raley's Landing Project Site	
Scientific Name	Common Name
Platanus acerifolia	London plane
Populus fremontii	Fremont cottonwood
Prunus sp.	Cherry
Quercus lobata	Valley oak
Robinia pseudoacacia	Black locust
Rosa sp.	Rose
Rubus procerus	Himalayan blackberry
Sambucus mexicana	Blue elderberry
Schinus molle	Peruvian pepper tree
Silybum marianum	Milkthistle
Sonchus asper	Common sow thistle
Ulmus americana	American elm
Vicia villosa	Spring vetch
Vulpia myuros	Annual fescue