

SUMMARY

This Supplemental *Final* Environmental Impact Statement/Subsequent *Final* Environmental Impact Report (*SFEIS/SFEIR*) evaluates environmental consequences of transportation alternatives in the South Sacramento Corridor, which includes areas east of the Sacramento River and south of the American River within Sacramento County. The eastern boundary of the corridor is approximately Elk Grove-Florin Road and Watt Avenue, expanding to the Cosumnes River in the vicinity of Elk Grove, and the southern limit is roughly Kammerer Road. The alternatives analyzed consist of the Locally Preferred Alternative Phase 2 (LPAP2), a Transportation Systems Management (TSM) Alternative, and a No-Action Alternative.

S-1 REGIONAL PLANNING CONTEXT

Planning for the South Sacramento Corridor as a part of Regional Transit's (RT) Light Rail Transit (LRT) program began over 25 years ago. Segments of the Corridor were formally identified for future LRT extension as early as 1981, when the RT Board designated Cosumnes River Boulevard (CRB) to Calvine Road for a future LRT extension. In 1984, the Sacramento Area Council of Governments (SACOG) completed the *Sacramento LRT Extension Study Expanded LRT System Analysis*, which prioritized projects to guide future LRT expansion efforts. This study identified the Meadowview, Laguna, Route 148, and Elk Grove extensions, portions of which generally follow the alignments of the recently completed South Sacramento Corridor Phase 1, Phase 2 (the subject of the present *SFEIS/SFEIR*), and a future Phase 3 (which will be the subject of a future alternatives analysis and environmental evaluation).

The SACOG *Sacramento Light Rail Transit Extension Study Final Report*, which identified nine preferred alignments that included the Meadowview, Calvine, and Elk Grove extensions, was brought before the RT Board for adoption in June, 1987. The RT Board's adoption of these alignments was intended to preserve rights-of-way in accordance with City and County of Sacramento planning processes, by depicting the alignments on the land use and circulation element maps of their respective general plans, and by adoption of policies "dedicating" these rights-of-way for LRT. In 1987, the RT Board unanimously passed a resolution "reaffirming Cosumnes River Boulevard as a preferred high capacity transit corridor." This resolution depicted the Meadowview LRT Extension (along the old Southern Pacific Railroad right-of-way) from downtown Sacramento, and thence eastward along Union House Creek within Cosumnes River Boulevard to Calvine Road, key portions of which reflect the LPAP2 alignment under consideration in the present document.

The South Sacramento Corridor was identified as a candidate for a future extension of LRT during RT's 1991 *Sacramento Systems Planning Study*, on the basis of which RT proceeded to prepare Environmental Impact Reports (EIR) to enable preservation of right-of-way for the Downtown-Natomas Airport and Folsom Corridor LRT extensions, prepared a project-level EIR for extending the starter line to Sunrise/Gold River, and advanced the South Sacramento Corridor into conceptual engineering and environmental review. This EIR, prepared under the state California Environmental Quality Act (CEQA), was for the program-level *Systems Planning Study* and did not evaluate detailed environmental impacts for specific projects contained in the study; but it did enable right-of-way preservation through local land use planning processes. It was recognized that additional detailed environmental evaluations for individual projects and phases would need to occur under the Federal National Environmental Policy Act (NEPA) for federal projects and under the state CEQA.

On March 29, 1995, following public review of seven investment alternatives in the 1994 *South Sacramento Corridor Alternatives Analysis/Draft Environmental Impact Statement/ Draft*

Environmental Impact Report (AA/DEIS/DEIR), the RT Board of Directors adopted an LPA for long-term development of LRT improvements in the South Sacramento Corridor. This designation identified the “LRT-Low/UPRR Alignment” as the preferred alignment for extension of LRT from downtown Sacramento southward to Calvine Road/Auberry Drive and thence to Elk Grove. The RT Board certified the EIR for this LPA on May 8, 1995 (see Resolution No. 95-05-2356, shown in Appendix F)

In response to funding constraints, the RT Board stated its intention to implement the South Corridor project in two phases. On August 28, 1995, the RT Board adopted the Interim Operable Segment, or first implementation phase of the project. The project was advanced to preliminary engineering and a project-specific draft and final Supplemental EIS/Subsequent EIR were prepared for this phase. Final design was completed in 2000. The South Sacramento Corridor Phase 1 Project extends from the 16th Street LRT station in downtown Sacramento along the UPRR corridor to Meadowview Road in south Sacramento. The Phase 1 project was open to the public in September 2003.

Also in 2000, in its *Multi-Corridor Study*, RT re-evaluated 19 candidate corridors for future extensions of fixed-guideway transit. This study confirmed the South Sacramento and Downtown/Natomas Airport corridors in order as the top ranking high priority corridors for further LRT extension. LRT extension in the South Sacramento Corridor was also included in the Metropolitan Transportation Plan for 2027, adopted by the Board of Directors of SACOG in July 2006.

Consistent with this planning to date, this *SFEIS/SFEIR* focuses on the environmental impacts of the second phase of the LPA adopted by the RT Board of Directors in 1995 and supplements the environmental evaluation contained in the 1994 AA/DEIS/DEIR. Specifically, it describes the current environmental setting, it recognizes current and recent planning activities and plans, and evaluates impacts from a more precisely defined Phase 2 project, including a description and evaluation of changes between that portion of the 1995 LPA that is now defined as LPAP2. This phase extends from Meadowview Road in South Sacramento along the previously designated alignment down the UPRR right-of-way and along Cosumnes River Boulevard to Cosumnes River College in the City of Sacramento. A new LRT station at Morrison Creek has been added to the previously defined LPA.

Various design options alignments will be considered in the future to extend LRT to the City of Elk Grove as a third phase of the project. The present project does not evaluate these alternative alignments, but engineering refinements for the LPAP2 are being carried out so as not to preclude any of the viable alignments that have been identified for the Phase 3 LRT extension. Phase 3 alignments and options will be fully evaluated in a subsequent alternatives analysis and environmental evaluation.

This SFEIR will be certified by the RT Board of Directors under CEQA, and the Federal Transit Administration will issue a Record of Decision for the SFEIS. These actions will enable the design, development of funding agreements, and construction of the project.

Table S-1 summarizes the timeline for these prior planning activities and shows anticipated future milestone activities.

		Current Milestones	Future Milestones
1981	RT Board Designates Cosumnes River Blvd. & Calvine Road for Right of Way Preservation		
1984	SACOG Completes Sacramento LRT Extension Study - Expanded LRT System Analysis		
1987	SACOG Issues Sacramento Light Rail Transit Extension Study Final Report		
1991	RT Completes Sacramento Systems Planning Study,		
1994	RT Board Certifies South Sacramento Corridor AA/DEIS/DEIR		
1995	RT Board Adopts Locally Preferred Alternative		
2000	South Line Phase 1 RT Board Certifies EIR FTA Issues Record of Decision		
2003	RT Opens South Line Phase 1 for Revenue Service RT Submits Phase 2 "New Starts" Criteria Report to FTA		
2004	RT Board Terminates Phase 2 at Cosumnes River College & Adds Morrison Creek Station RT Board Rejects Maintenance Facility Options Along Phase 2 RT Completes Fleet Management Plan 2003 - 2013 RT Submits Phase 2 "New Starts" Criteria Report to FTA Receives Recommended Rating FTA Approve New Starts Baseline (TSM) Alternative RT Receives Authorization to Enter Preliminary Engineering		
2005	RT / FTA Circulate SDEIS/SFEIR		
2007	FTA / RT Distribute SFEIS/SFEIR RT Board Certifies SFEIR		
2008	FTA Issues Record of Decision FTA Authorizes Final Design		
2009 - 2010	RT Develops Final Design RT / FTA Sign Full Funding Grant Agreement		
2010 - 2012	LPAP2 Construction		

S-2 PURPOSE AND NEED

The Purpose and Need statement summarized below and detailed in Chapter 1 identifies and describes the transportation problem(s) that the proposed action is intended to address and specifies the underlying purposes of and need for the proposed action. The proposed action, summarized in Section [S-4-3](#), is the [4.3-mile](#) LPAP2 LRT extension of the Sacramento LRT system into Southern Sacramento, with four LRT stations and associated facilities (e.g., park-and-ride lots/structure) and amenities.

The South Sacramento Corridor is one of the fastest growing areas of metropolitan Sacramento. Improving public transit services to provide faster, more convenient access between the South Corridor and downtown Sacramento as well as to other corridor activity centers is the primary purpose of the South Sacramento Corridor Phase 2 project.

Meeting this primary project purpose would also address the following related needs:

- Enhance regional connectivity through expanded, interconnected LRT services along the primary travel corridors in Sacramento County, by connecting the project area with Interstate 80 (I-80) east (existing Northeast LRT Line), US 50 (existing Folsom LRT Line with extensions), and State Route 99 (SR 99)/I-5.
- Accommodate future travel demand in the corridor by increasing transit capacity and expanding modal options (by considering LRT and other enhanced transit services along with conventional transit).
- Reduce the growth in increasing traffic congestion on SR 99 and I-5 between downtown Sacramento and the communities of Elk Grove, Laguna Creek, and Laguna West, and on the major north-south arterials in South Sacramento, such as Franklin Boulevard and Bruceville Road.

- Improve regional air quality by reducing auto emissions.
- Improve mobility options to employment, education, medical, and retail centers for corridor residents, in particular low-income and ethnic minority populations and provide a mobility option to the use of congested highways.
- Support local economic and land development goals by increasing transit service to current and future corridor activity centers.

Figure 1.1-1 depicts major activity centers in the South Sacramento Phase 2 Corridor. Figure S-1 shows the location of the proposed project. The South Sacramento Corridor is located within one of the fastest-growing urban areas in the State of California and the nation. The Sacramento consolidated metropolitan statistical area experienced a 21 percent increase in population between 1990 and 2000¹, and regional population growth is projected to continue at a high rate for the foreseeable future. Within the South Sacramento Phase 2 area (i.e., the area south of Meadowview and Mack Roads comprising the area most directly served by the alternatives under consideration in this document), the number of households is projected to increase from 82,440 in 2000 to *179,100* in *2030*, an increase of *117* percent.² Employment in this same area is expected to increase by *185* percent, from 36,820 to *104,800*, over the same period.³ RT is working closely with the City of Sacramento and other local jurisdictions to implement its Transit for Livable Communities (TLC) program designed to focus new development around transit stations. The TLC program is an important part of RT's planning for the South Sacramento Corridor.

The levels of population and job growth projected for the corridor and region are likely to adversely affect corridor transportation systems. Travel forecasts indicate that person trip demand in the South Sacramento Corridor Phase 2 Area will grow by *167* percent between 2000 and *2030*. Neither the highway network nor the transit system will be able to accommodate this projected future travel demand without major improvements.

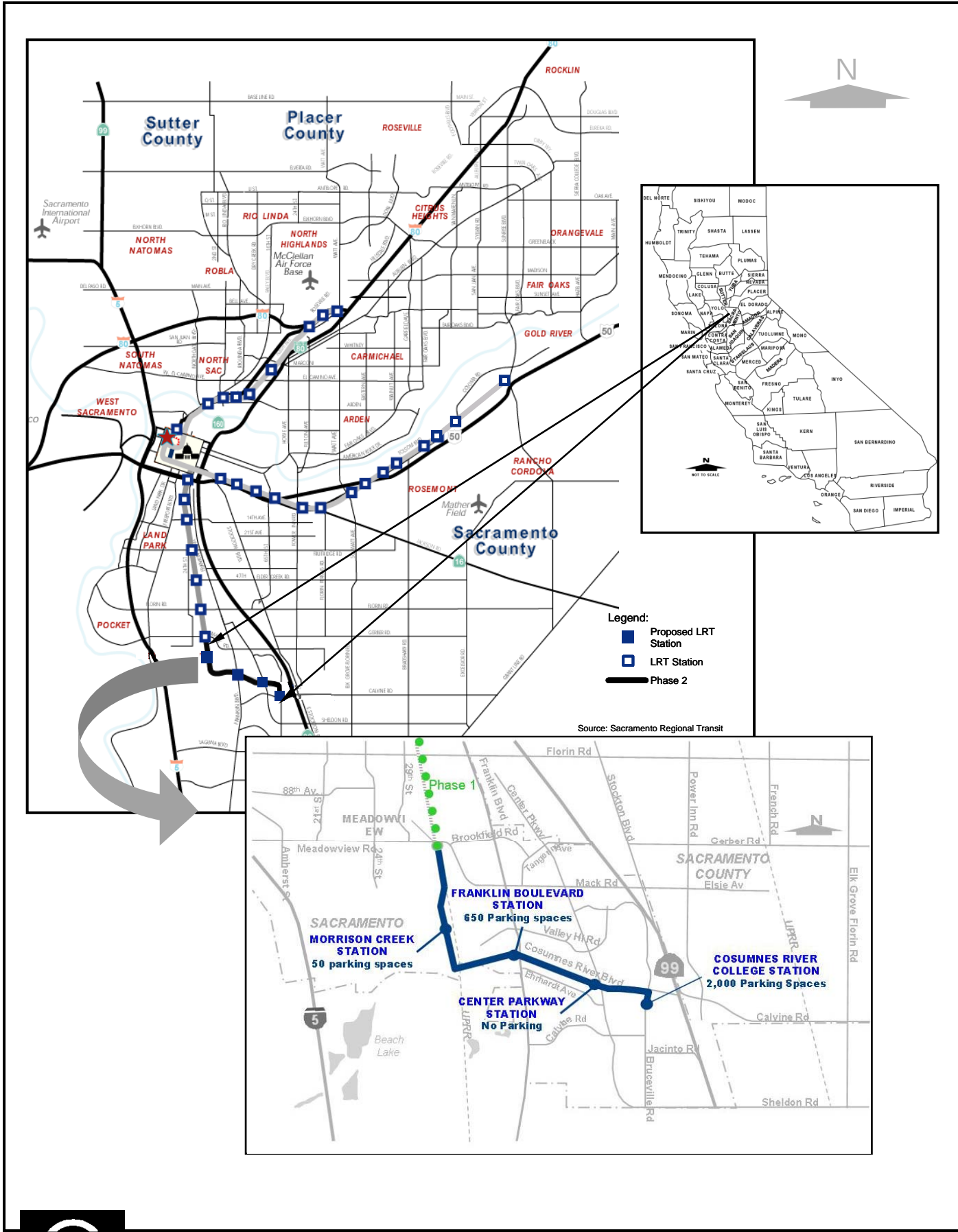
The major north-south freeways in South Sacramento – I-5 and SR 99 – are the critical freeway links in the roadway network and the most affected by corridor growth. Traffic volumes are projected to increase substantially throughout the length of both highways as the area grows. The projected growth in traffic will produce a steady deterioration in highway travel conditions in coming years. I-5 is currently below capacity between Meadowview and Laguna, but severe congestion is projected for *2030* operations south of Meadowview Road. SR 99, which is currently over capacity, was widened to accommodate High Occupancy Vehicle (HOV) lanes from Elk Grove Boulevard north to the Sacramento Central City during the 1990s; no additional improvements are planned for this section of SR 99 over the next 20 years.⁴ By *2030*, SR 99 will suffer severe congestion during peak periods over the length of the corridor. Major arterials serving South Sacramento will also experience increasing congestion as the area continues to develop, and a combination of transportation network improvements will be necessary to meet future travel demand in South Sacramento. The use of alternative modes, including public transit, will be important in meeting this need.

¹ U.S. Census Bureau.

² Sacramento Area Council of Governments (SACOG) statistics used for preparation of the *2006* Metropolitan Transportation Plan and used in the travel demand modeling summarized in Chapter 3.

³ Ibid.

⁴ DKS, 2005



South Sacramento Corridor
Phase 2 Project

**SOUTH SACRAMENTO CORRIDOR
Figure S-1**

RT proposes to improve its transit services substantially in South Sacramento and elsewhere. The South Line LRT Phase 1, which opened to service in September, 2003, was the highest priority transit improvement project in the region. Express bus demand from Elk Grove to downtown Sacramento is currently running over capacity. The overloading of express buses is likely to increase due to the ongoing rapid growth in the area fueling increased automobile commuting to downtown Sacramento jobs.

Current and projected bus ridership emphasizes the need for additional transit service, particularly on exclusive right-of-way. This is because the biggest obstacle to realizing projected transit ridership is likely to be the problems faced by buses operating in mixed flow traffic on congested roadways. Bus travel times will increase (and likely discourage transit use) unless buses can operate apart from the mixed-flow traffic stream. Travel time studies have shown that bus transit trips between major activity centers in the South Sacramento corridor would typically be five to 30 minutes longer than transit trips using exclusive right-of-way, such as the proposed LPAP2 LRT Extension.

Increasing congestion and slowing travel times for both auto and transit threaten to worsen regional air quality. Metropolitan Sacramento currently is an Environmental Protection Agency designated non-attainment area for ozone. Automobiles are responsible for 70 percent of this air pollution. The Sacramento Metropolitan Air Quality Management District's adopted *Air Quality Attainment Plan* and Sacramento County's *General Plan* both include the development of light rail and increased use of alternative-fuel vehicles as major clean air policy objectives. The South Corridor Phase 2 Project would directly address these objectives.

S-3 REFINEMENTS TO THE PROJECT AND EIS/EIR

Refinements have been made to the Project and EIS/EIR since the Draft EIS/EIR was published. These refinement include

- ***Movement of the light rail alignment off of the Morrison Creek Levee.*** *In its comment letter on the SDEIS/SDEIR, the City of Sacramento Utilities Department, which maintains the Morrison Creek levee, stated that the light rail alignment should not be located on the levee. After meetings with the Utilities Department, the light rail alignment was moved to the west of the prior alignment shown in the SDEIS/SDEIR. The new alignment is on a new embankment that actually increases the size of the levee – called a “super levee.” This new alignment moves the light rail off the existing levee but does require the acquisition of two homes and a portion of the back yard of a third home.*
- ***Addition of a Grade Separation (light rail flyover) over Cosumnes River Boulevard.*** *In its comment letter on the SDEIS/SDEIR, the California Public Utilities Commission requested that a grade separation be provided for the light rail line over Cosumnes River Boulevard. The requested grade separation is included as part of the project in this SFEIS/SFEIR.*
- ***Updating of traffic data.*** *In its comment letter on the SDEIS/SDEIR, the City of Sacramento stated that the data used to evaluate traffic should be more recent than what is contained in the SDEIS/SDEIR. In response, Year 2007 traffic counts were taken, and the traffic analysis in Chapter 3, Volume 1, has been revised using this more current traffic information.*
- ***Supplemental Air Emissions Assessment.*** *In its comment letter on the SDEIS/SDEIR, the Sacramento Metropolitan Air Quality Management District requested that its new construction emissions model be applied to the project. In addition, the City of Sacramento requested in its comment letter on the SDEIS/SDEIR that the traffic information/counts be updated. Section 4.3,*

Air Quality and 5.2.3 – Air Quality (Construction) – have been updated to reflect the results of the new emissions model and the air emissions associated with the new traffic levels.

- **Supplemental Noise/Vibration Assessment.** *In its letter regarding the SDEIS/SDEIR, the U.S. EPA noted that the Federal Transit Administration (FTA) has more recent noise/vibration criteria than those used for the SDEIS/SDIR. The noise/vibration analysis has been updated to reflect these criteria. Based on this new analysis, the extent and height of noise wall barriers required to mitigate the impacts has been reduced. The new locations and heights of the noise walls identified in this SFEIS/SFEIR still fully mitigate the noise impacts to below the FTA criteria and below RT's more stringent criteria.*
- **Refinements/updates to Construction Schedule.** *The Construction schedule has been revised to reflect the current status of the proposed project – See Chapter 5, Volume I.*
- **Revised Project Capital Costs.** *The capital costs for the TSM and LPAP2 alternatives have been revised to reflect more recent unit costs, the current status of the project design, and the revised construction schedule. The refined costs have been assigned to the anticipated year of expenditure under the revised construction schedule, and inflation rates have been applied, providing a year-of-expenditure cost estimate for the TSM and the LPAP2.*
- **Revisions to the SEIS/SEIR in Response to Public Comments on the SDEIS/SDEIR.** *Other revisions/refinements have been made in this Final EIS/EIR in response to public comments received on the SDEIS/SDEIR. Volume II of this SFEIS/SFEIR contains the comments given on the SDEIS/SDEIR and responses to these comments. As indicated in Volume II, responses at times led to revision to sections of the SFEIS/SFEIR. All refinements and revisions to the SDEIS/SDEIR are identified in this SFEIS/SFEIR in italics*

S-4 ALTERNATIVES EVALUATED IN THE SFEIS/SFEIR

Three alternatives are evaluated in this *SFEIS/SFEIR*, as described below.

S-4.1 No-Action Alternative

The No-Action Alternative consists of highway and transit systems existing in the South Sacramento Corridor as of year 2000, plus planned and programmed improvements to the year 2030 as contained in the adopted 2006 Metropolitan Transportation Plan (MTP). It represents future conditions against which the transportation, environmental, and community impacts of the other alternatives are compared.

Major South Corridor roadway improvements in the 2027 MTP include HOV lanes and additional park-and-ride lots along I-5, from Elk Grove Boulevard to Downtown Sacramento. These improvements will provide travel alternatives, improved auto travel times, and additional transit amenities, especially for residents of Laguna and Elk Grove, and those living nearer I-5. Other major roadway system improvements identified in the 2027 MTP are the City of Sacramento's proposed widening of CRB between Bruceville Road and Franklin Boulevard, the extension of CRB from its western terminus at Franklin Boulevard to I-5 (expected to be completed by 2008), and the widening of Bruceville Road ultimately to three lanes in each direction between Sheldon Road and CRB (to be completed by 2010).

The 2027 MTP transit improvements within the South Sacramento Corridor that were incorporated into the No-Action Alternative are as follows:

- Continued expansion of Capitol Corridor intercity train service to 16 daily trains to the Bay Area.
- Commuter rail service between Dixon and Auburn using the Union Pacific (UP)/Amtrak facilities.
- Light rail extended north from Downtown Sacramento to Natomas Town Center and the Sacramento Airport.
- Light rail extended east from Northeast Line to Antelope in Sacramento County.
- Light rail extended to city of Folsom (opened October 2005) and to Amtrak station in Downtown Sacramento.
- Implementation of express LRT service to Downtown Sacramento from Folsom and Watt/I-80.
- Light rail extended west from Downtown Sacramento to West Sacramento.
- Bus service increased substantially above current levels, with concomitant bus fleet expansion from the current 230 buses to 400 buses by *2030*.
- Bus rapid transit implemented in three commute corridors, including Stockton Boulevard, Watt Avenue, and Sunrise Boulevard.
- Expansion of bus and van service regionwide, including an increase in service for elderly and disabled persons.
- Additional community circulator vans or shuttles that serve neighborhoods, commercial areas, and jobs centers throughout the day at reduced fares.

Although contained in the *2027* MTP, the LPAP2 is not included in the No-Action Alternative, given that it is the proposed action being evaluated in this *SFEIS/SFEIR*. Figure 2.2-1 and Table 2.2-1 summarize transit service in the South Sacramento Corridor for the No-Action Alternative.

S-4.2 Transportation Systems Management (TSM) Alternative

The Transportation Systems Management (TSM) Alternative consists of transit improvements that are lower in capital cost than the proposed LPAP2. Consistent with FTA guidance, these improvements generally represent the “best that can be done” to improve transit in the corridor without building the rail project. This alternative would replace the LPAP2 LRT extension and associated bus service with lower-cost line-haul and feeder bus routes, by including the following additions compared to the No-Action Alternative:

- Direct express bus service via SR-99 HOV lanes, connecting from a new CRC transit center (with 1,400 new parking spaces) to Downtown Sacramento to enhance drive-access transit opportunities in the LPAP2 Corridor.
- Direct express bus service via Interstate 5 HOV lanes, connecting from the Laguna West community to Downtown Sacramento. The existing park-and-ride lot in Laguna West was sized to accommodate parking demand for this service.
- A high-frequency, trunkline bus route connecting the Elk Grove/Lent Ranch area to CRC and the Meadowview LRT Station via Bruceville Road, Cosumnes River Boulevard and Franklin Boulevard.
- The planned transit center at CRC would be improved to enhance bus-to-bus and park-and-ride lot access at this transit center. Other improvements to bus-to-LRT transfers at the Meadowview LRT station were added.

- Transit priority treatment along Stockton Boulevard in the corridor, affecting Route 50E. RT is also implement transit priority along Watt Avenue and Sunrise Avenue in addition to downtown Sacramento as part of a system-wide approach to transit priority, so transit priority would be part of the No-Action Alternative as well.

Figure 2.3-1 shows the South Sacramento Corridor transit network proposed under the TSM Alternative. Table 2.3-1 lists the starting headways for the new bus services identified to “replace” the LPAP2 LRT extension under this alternative.

Rail operations under the TSM Alternative would consist of the existing Sacramento LRT system with other LRT and rail improvements as identified in the 2027 Metropolitan Transportation Plan but without the South Corridor Phase 2 extension. Note that the TSM Alternative includes all the other LRT extensions in the 2027 MTP – that is, the Downtown Natomas Airport Extension and the proposed LRT extensions to West Sacramento and Antelope, as included in the No-Action Alternative.

S-4.3 Locally Preferred Alternative Phase 2 (LPAP2)

The proposed action is the Locally Preferred Alternative Phase 2 (LPAP2), an extension of the current LRT system that would implement the second phase of the South Sacramento Corridor LRT extension. Light rail vehicles would operate generally at 10-minute average headways during peak hours of service and have a maximum speed of 55 mph. The LPAP2 consists of approximately 4.3 miles of dual LRT tracks from the existing Meadowview Road station to Cosumnes River College. Figure S-2 shows the general alignment.

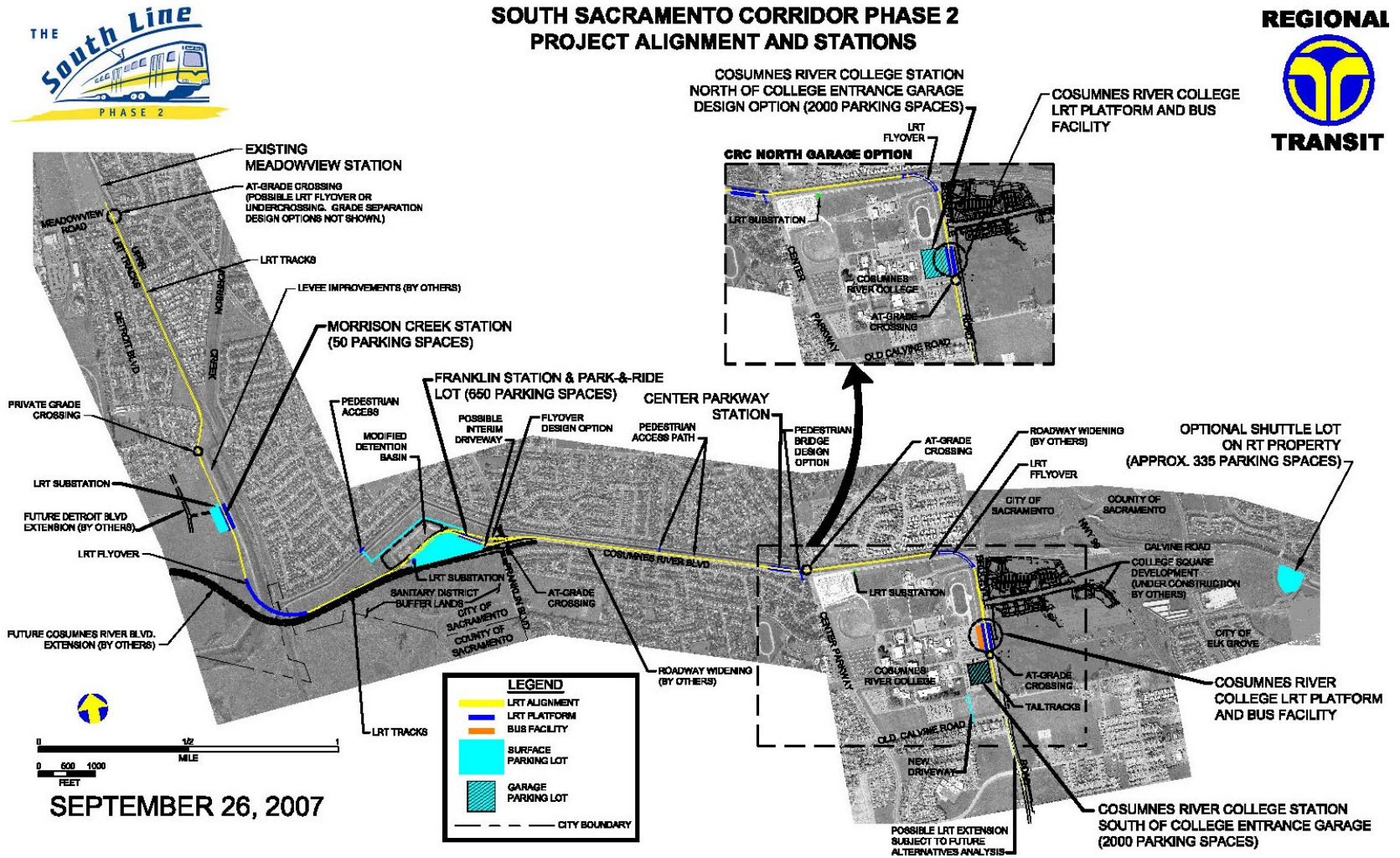
The detailed alignment is illustrated in Figures 2.4-3 through 2.4-18. From the Meadowview Station, the track alignment would continue south on the west side of the Union Pacific Railroad (UPRR) right-of-way to Morrison Creek, where it would jog west then south remaining on the west side of the creek. North of the Cosumnes River Boulevard Extension, the alignment would, turn east crossing Morrison Creek, the UPRR, and Union House Creek on aerial structure. From there the alignment would continue east on the north side of the Cosumnes River Boulevard Extension (a roadway project to be completed by others) crossing Franklin Boulevard and Center Parkway along the north edge of Cosumnes River Boulevard. After crossing Center Parkway the alignment *would remain along the north edge and then cross over CRB on a flyover bridge and* would turn south on the west side of Bruceville Road to terminate at Cosumnes River College. Design Options for LPAP2 crossings at Meadowview Road *and* Franklin Boulevard are described in Section 2.4.3, Detailed Description of LPAP2 Alignment.

The LPAP2 includes four stations:

1. Morrison Creek Station (with PNR lot for 50 spaces);
2. Franklin Boulevard Station (with PNR lot with 650 spaces);
3. Center Parkway Station, north of Cosumnes River Boulevard west of the Center Parkway intersection; and
4. Cosumnes River College, immediately north of the College’s east entrance (with PNR structure with 2,000 spaces).

RT planners *have and* will *continue to* work with local planners and jurisdiction to encourage transit oriented development around the Morrison Creek and Cosumnes River College stations.

Figure S-2: Locally Preferred Alternative Phase 2
Proposed Light Rail Transit (LRT) Alignment and Station Locations



Feeder bus service would be oriented to serve stations on the extension. The LPAP2 also includes four Traction Power Substations:

- On the north boundary of the Morrison Creek Station.
- In the southwest corner of the Franklin Station park-and-ride lot.
- On the southeast corner of CRB and Center Parkway or a site 600 feet east.
- In the vicinity of the tail tracks at CRC.

Grade-separated pedestrian/bike crossings are proposed at the Franklin and Center Parkway stations. A grade separation for the light rail line is under consideration for Meadowview Road, Franklin Boulevard, *but is included over* Cosumnes River Boulevard. Vehicle maintenance for the LPAP2 LRT vehicles would occur at RT's central maintenance facility. RT has acquired additional LRT vehicles to operate on the LPAP2.

S-5 SUMMARY OF ENVIRONMENTAL IMPACTS, DESIGN REQUIREMENTS/ RT PRACTICES, AND PROPOSED MITIGATION MEASURES

Table S-1 presents the long term environmental impacts and proposed mitigation measures for the TSM and LPAP2 Alternatives. Table S-2 presents the short-term (i.e. construction) impacts and mitigation measures. For a full description of impacts and mitigation, see Chapters 3, 4 and 5. All proposed mitigation measures are included in project cost estimates.

Many impacts of the TSM and LPAP2 alternatives would be addressed through design requirements and RT practices that are required by regulations, current standards and guidelines or are already part of RT's existing project development and construction procedures. These design requirements and RT practices are identified for each impact category and summarized in Tables S-2 and S-3 because compliance with these practices would minimize or avoid project impacts, precluding the need for formal mitigation measures. In all cases RT's construction documents would require the use of appropriate RT Practices and proposed mitigation measures listed in this environmental document.

Table S-2: Summary of Long-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures

Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
<p>Transportation and Traffic Chapter 3</p>	<p>Not implementing the TSM or LPAP2 would not yield the increased transit use and decreased roadway congestion.</p>	<p>Increased Transit Use: The TSM Alternative is projected to increase year 2030 weekday ridership by 3,400 trips (linked trips) over the No-Action Alternative.</p> <p>Decreased Roadway Congestion: TSM Alternative will reduce Average Daily Traffic by 100 to 1,400 more vehicles on SR 99, north of Sheldon Road, than the No-Action Alternative (in <i>2030</i>).</p> <p>Travel Time Savings: The drive-access-transit time improvement of the TSM Alternative compared with the No-Action Alternative ranges from 2 to 18 minutes (in 2030).</p> <p>Impact on Intersections: Under the TSM Alternative, during the p.m. peak hour, operations would deteriorate from LOS C to D at <i>Bruceville Road and Cosumnes River College</i> in the City of Sacramento.</p> <p>Parking: This alternative is projected to reduce downtown parking demand by about 900 spaces (in 2025).</p> <p><u>Mitigation Measures:</u> <i>TT-1</i> Add a <i>second</i> eastbound <i>left turn lane</i> and <i>add a shared through-right turn lane so the eastbound approach has two left turn lanes, one through-right turn lane and one dedicated right turn lane. This will improve the LOS at the intersection from D to C in the PM peak hour.</i></p>	<p>Increased Transit Use: The LPAP2 is projected to increase year 2030 weekday ridership by 5,900 trips (linked trips) over the No-Action Alternative and by 2,500 trips over the TSM Alternative. These are new trips attracted to transit by the LPAP2; additional riders will transfer from buses to LRT but are not included in this total.</p> <p>Decreased Roadway Congestion: the LPAP2 would reduce Average Daily Traffic by 100 to 2,500 more vehicles on SR 99, north of Sheldon Road, than the No-Action Alternative (in <i>2030</i>).</p> <p>Travel Time Savings: the LPAP2 would improve drive-access-transit time from 17 to 29 minutes (in 2030) compared with the No-Action Alternative.</p> <p>Impact on Intersections: Under the LPAP2, operations at five intersections in the City of Sacramento <i>and one intersection in the County of Sacramento</i> are projected to <i>exceed thresholds</i>.</p> <p>Parking: The LPAP2 is projected to reduce downtown parking demand by about 1,300 spaces (in <i>2030</i>).</p> <p><u>Mitigation Measures:</u> <i>T-1</i> <i>Center Parkway & CRB: add a second southbound left turn lane & provide overlap for all right turn phases. Mitigation requires widening bridge over Union House Creek which is included in the projects costs.</i></p>

Table S-2: Summary of Long-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures

Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
			<p><i>T-2 Franklin Boulevard & CRB: provide overlap for all right turn phases.</i></p> <p><i>T-3 Bruceville Road & CRC: Add a second eastbound left turn lane & add a shared through-right turn lane.</i></p> <p><i>T-4 Bruceville Road & Old Calvine Road: provide overlap signal phasing on the right turn.</i></p> <p><i>T-5 CRC new South Access & Old Calvine Road: Signalize the intersection.</i></p> <p><i>T-6 Auberry Drive & Calvine Road: provide protected phasing for the northbound and southbound approaches.</i></p> <p><i>T-7 RT will implement crossing signal control measures at LRT grade crossings adjacent to stations. These would minimize the amount of time gates are down while LRT trains are stopped for loading and unloading passengers at stations before they cross the roadway. A timed delay mechanism will be installed that activates the crossing gates just prior to the train departing the station platform.</i></p> <p><i>T-8 RT will implement "near side" crossing signal control measures at the intersections of Center Parkway and CRB, Franklin Boulevard and CRB, and Bruceville Road and Cosumnes River College to provide additional safety.</i></p> <p><i>T-9 Express trains not stopping at a near side station would have equipment to bypass the timed delay.</i></p>

Table S-2: Summary of Long-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures

Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
			<p><i>Impacts at these intersections would be reduced to below the thresholds with these mitigation measures.</i></p> <p><u>2012 Intersection Mitigation Measures:</u></p> <p><i>T-10 Center Parkway & CRB: add a second southbound left turn lane and provide overlap for all right turn phases and restripe the eastbound approach to one left, one through and one through right.</i></p> <p><i>T-11 Bruceville Road & CRB: provide overlap for all right turn phases.</i></p> <p><i>T-12 Bruceville Road & Sheldon Road: provide overlap for all right turn phases.</i></p>
<p>Aesthetics Section 4.1</p>	<p>No impact.</p>	<p>Visual changes associated with construction of one PNR lot would be consistent with the changing urban scene.</p> <p><u>Mitigation Measures:</u></p> <p><i>V&A-2</i> RT will incorporate landscaping into the final design to soften views of PNR lots.</p> <p><i>V&A-3</i> RT will control potential light and glare by directing lighting associated with proposed PNR lots, onto the premises of each facility and away from surrounding land uses.</p>	<p>New LRT facilities would introduce visual changes that would be perceived by motorists, residents and business occupants within the project corridor and would add more or less to the visual elements of the urban scene, depending on the design options at each location.</p> <p><u>Mitigation Measures:</u></p> <p><i>V&A-1</i> RT will invite public participation regarding station and noise wall design during the final design phase of the project.</p> <p><i>V&A-2</i> RT will incorporate landscaping into the final design to soften views of LPAP2 LRT stations, PNR lots, substations and the optional shuttle lot.</p> <p><i>V&A-3</i> RT will control light and glare by directing lighting associated with LRT facilities onto the premises of each facility and away from surrounding land uses.</p>

Table S-2: Summary of Long-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures

Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
Agriculture Section 4.2	No impact.	<i>No impact to farmland</i> <u>Mitigation Measures:</u> None required.	The LPAP2 would require approximately <i>5.6</i> acres of farmland (<i>in addition to 19.1 acres of SRCSD Bufferlands used for cattle grazing</i>) for construction of the LPAP2. These areas of farmland are not under Williamson Act contract and are located adjacent to urbanized areas. Most of the farmland area that would be taken for the project is zoned for uses other than agriculture. Form NRCS-CPA-106 has been submitted to the NRCS. Following their review, a total site farmland assessment criteria score will be determined for the project. Based on federal regulation 7 CFR 658.4, sites receiving a total score of less than 160 points shall be given a minimal level of consideration for protection and no additional sites need be evaluated. <u>Mitigation Measures:</u> None required.
Air Quality Section 4.3	Not implementing the TSM or LPAP2 would not yield the reduction in air emissions shown for the TSM and LPAP2 Alternatives.	Regional criteria pollutant emissions (CO, ROG, NOx, SOx, and PM ₁₀) are projected to decrease in comparison to the No-Action Alternative. Small-localized increases in CO would result, but are not anticipated to exceed the State or federal one- and eight-hour standards. The CO emissions at the PNR lot and PM10 emissions (from idling of buses) would not exceed State or federal standards. <u>Mitigation Measures:</u> None required.	Regional criteria pollutant emissions (CO, NOx, SOx, and PM10) are projected to decrease when compared to the No-Action Alternative, by amounts comparable to (or better than) the TSM Alternative. Small localized increases in CO would result, but are not anticipated to exceed the State or federal one- and eight-hour standards. The CO emissions at PNR lots and PM10 emissions (from idling of buses at stations) would not exceed State or federal standards. <u>Mitigation Measures:</u> None required.

Table S-2: Summary of Long-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures

Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
<p>Biological Resources</p> <p>Section 4.4</p>	<p>No impact.</p>	<p>No impact to wetlands or other waters of the U.S.</p> <p>Up to 2.0 acres of habitat suitable for western burrowing owl would be affected. The western burrowing owl is a federal and California species of concern.</p> <p><u>Mitigation measures:</u></p> <p><i>B-5; B-6</i> Permanent impacts to western burrowing owl burrows and foraging habitat will be mitigated through the purchase of credits at a CDFG-approved mitigation bank.</p>	<p>Loss of 0.3 <i>17</i> acres of jurisdictional wetlands for the LPAP2.</p> <p>Up to 0.14 acres of seasonal wetlands that provide suitable habitat for vernal pool fairy shrimp, midvalley fairy shrimp, vernal pool tadpole shrimp, and California linderiella; 0.04 acres of suitable habitat for western pond turtle and giant garter snake; and between 0.70 and 63.34 acres of nesting and foraging habitat for 13 special-status bird species would be affected. <i>Possible loss of Valley oaks (Quercus lobata), interior live oak (Quercus wislizenii), and blue oak (Quercus douglasii) from SRCSD Bufferlands. Trees planted in 1995 as part of the Trail of Trees effort.</i></p> <p><u>Mitigation measures:</u></p> <p><i>B-1</i> <i>Compensate for impacts to vernal pool crustacean habitat through purchase of the equivalent of 2.26 acres of preservation credits, and 0.14 acre of creation/restoration credits from a USFWS-approved conservation bank, or combination of banks.</i></p> <p><i>B-2</i> <i>Transplant directly affected elderberry shrubs and purchase the appropriate number of beetle habitat credits at a USFWS-approved conservation bank prior to ground breaking.</i></p> <p><i>B-3</i> <i>Purchase equivalent of 9.823 acres of giant garter snake habitat credits from a USFWS-approved conservation bank.</i></p> <p><i>B-4</i> Consult with SRCSD Bufferlands manager to explore opportunities to compensate for impacts to nesting and foraging habitat for special-status bird species.</p>

Table S-2: Summary of Long-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures

Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
			<p><i>B-5;B-6</i> Permanent impacts to western burrowing owl burrows and foraging habitat and Swainson's hawk foraging habitat will be mitigated through the purchase of credits at a CDFG-approved mitigation bank.</p> <p><i>B-7</i> Provide a qualified arborist to survey potentially affected trees. To extent possible, avoid removal of native oaks, mature native riparian trees, and any other protected trees. Develop and implement a mitigation plan, in accordance with the applicable City ordinances, to compensate for removal of protected trees. Compensate for loss of protected trees pursuant to the City of Sacramento Heritage Tree Ordinance.</p> <p><i>B-8</i> Will obtain all necessary permits pertaining to affected waters of the U.S. The permitting process would also require compensation for project-related impacts.</p> <p><i>B-9</i> Purchase mitigation credits in an agency-approved wetland mitigation bank or an in lieu fee.</p>
<p>Cultural Resources Section 4.5</p>	<p>No impact.</p>	<p>No archaeological resources appear eligible for listing in the NRHP or the CRHR. Because much of the APE has been covered over with pavement or other obstructions, however, the survey could not conclude with certainty that there are no unrecorded cultural remains within the APE. Areas in which such remains may exist have been identified. No historic architectural resources appear eligible for listing in the NRHP or CRHR, or are included in any local list of historic resources.</p>	<p>No archaeological resources appear eligible for listing in the NRHP or the CRHR. Because much of the APE has been covered over with pavement or other obstructions, however, the survey could not conclude with certainty that there are no unrecorded cultural remains within the APE. Areas in which such remains may exist have been identified. No historic architectural resources appear eligible for listing in the NRHP or CRHR, or are included in any local list of historic resources.</p>

Table S-2: Summary of Long-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures

Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
		<p><u>Mitigation Measures:</u></p> <p><i>H&C-1</i> During construction in identified areas, monitoring will be conducted by a qualified professional archaeologist and/or a member of the local Native American community. The monitor(s) will have the ability to temporarily stop any work in an area where archaeological materials or human remains are uncovered long enough to assess the finds and, in the case of human remains, to follow the stipulations set out in the State Health and Safety Code (Section 7050.5). Such provisions will be in the construction contracts.</p> <p><i>H&C-2</i> If unanticipated archaeological resources are encountered during construction, they would be addressed in consultation with the Office of Historic Preservation (OHP) or in accordance with an archaeological treatment plan to be developed in consultation with OHP. Such provisions will be in the construction contracts.</p>	<p><u>Mitigation Measures:</u></p> <p><i>H&C-1</i> During construction in identified areas, monitoring will be conducted by a qualified professional archaeologist and/or a member of the local Native American community. The monitor(s) will have the ability to temporarily stop any work in an area where archaeological materials or human remains are uncovered long enough to assess the finds and, in the case of human remains, to follow the stipulations set out in the State Health and Safety Code (Section 7050.5). Such provisions will be in the construction contracts.</p> <p><i>H&C-2</i> If unanticipated archaeological resources are encountered during construction, they would be addressed in consultation with the Office of Historic Preservation (OHP) or in accordance with an archaeological treatment plan to be developed in consultation with OHP. Such provisions will be in the construction contracts.</p>
<p>Electromagnetic Fields (EMF) and Electromagnetic Interference (EMI)</p> <p>Section 4.6</p>	<p>No impact.</p>	<p>No impact.</p>	<p>Present evidence suggests that any increased health risks from EMF exposures attributable to light rail improvements would be very small. The LPAP2 would generate EMF, which could interfere with the effective performance of electronics and electrical equipment.</p> <p><u>Mitigation Measures:</u></p> <p><i>EMF-1</i> The potential for EMI effects can be minimized by ensuring that all electronic equipment is operated with a good electrical ground and that proper</p>

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Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
			shielding is provided for electronic system cords, cables, and peripherals. <i>EMF-2</i> Specialized components, such as filters, capacitors and inductors that can also reduce EMI susceptibility of certain systems will be installed, as appropriate.
Geology, Soils and Seismicity Section 4.7	No impact.	The risk of fault rupture in the project area appears very low. The proposed facilities would, however, be exposed to a risk of substantial ground shaking, which can impose loads on structures and earth embankments. Some soils may be susceptible to seismically induced liquefaction and settlement, which could affect design and service of the alternatives. <u>Mitigation Measures:</u> All geologic hazard impacts will be fully addressed by design requirements. Therefore, no mitigation is required.	The risk of fault rupture in the project area appears very low. The proposed facilities would, however, be exposed to a risk of substantial ground shaking, which can impose loads on structures and earth embankments. Some soils may be susceptible to seismically induced liquefaction and settlement, which could affect design and service of the alternatives. <u>Mitigation Measures:</u> All geologic hazard impacts will be fully addressed by design requirements. Therefore, no mitigation is required.
Hazardous Wastes Section 4.8	No impact.	Construction activities may be affected by releases of hazardous materials from known or previously unidentified sites. Clearing/grubbing/excavation may expose or encounter hazardous materials.	<ul style="list-style-type: none"> • <i>Construction activities may be affected by releases of hazardous materials from known or previously unidentified sites. Clearing/grubbing/excavation may expose or encounter hazardous materials.</i> • Contaminated groundwater may be encountered. • Dewatering during trenching or excavating may change or amplify local hydraulic gradients and draw groundwater contamination into the trench or excavation. • New tracks and passenger LRT service would be introduced into a segment of the existing UPRR corridor with existing freight rail service. Safety issues associated with any hazardous materials transport on freight trains would not increase or decrease and would remain the responsibility of the UPRR.

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Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
		<p><u>Mitigation Measures:</u></p> <p><i>HW-3</i> Contractors will incorporate procedures into a construction management plan describing how they will monitor for subsurface contamination.</p> <p><i>HW-4</i> Prepare and implement a contingency plan for handling and disposing of contaminated soil and groundwater.</p> <p><i>HW-6</i> Perform Phase 2 site investigations where indicated.</p> <p><i>HW-8</i> Remediation and/or disposal of all materials deemed to be hazardous.</p>	<p><u>Mitigation Measures:</u></p> <p><i>HW-1</i> Exposed soil in the median or on the shoulder of highways and primary traffic corridors that are more than 20 years old will be tested for lead prior to beginning construction.</p> <p><i>HW-2</i> The <i>three buildings</i> subject to demolition will be inspected (and tested as necessary) for asbestos containing materials and lead based paints.</p> <p><i>HW-3</i> Contractors will incorporate procedures into a construction management plan describing how they will monitor for subsurface contamination.</p> <p><i>HW-4</i> Prepare and implement a contingency plan for handling/disposing of contaminated soil and groundwater.</p> <p><i>HW-5</i> Additional site-specific information will be collected regarding hazardous materials use and hazardous waste generation for those properties that would be acquired for right-of-way or support facilities.</p> <p><i>HW-6</i> Perform Phase 2 site investigations where indicated.</p> <p><i>HW-7</i> All contaminated materials encountered will be evaluated in the content of applicable local state, and federal regulations and/or guidelines governing hazardous wastes. Remediation and/or disposal of all materials deemed to be hazardous.</p> <p><i>HW-8</i> All materials deemed to be hazardous will be remediated and/or disposed of following applicable regulatory agency regulations and/or guidelines.</p>
Hydrology,	No impact.	No long-term groundwater impacts are anticipated. Runoff	From Morrison Creek to Union House Creek, and from

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<p>Floodplain and Water Quality</p> <p>Section 4.9</p>		<p>from PNR lot would be directed to the stormwater system, and eventually to receiving waters.</p> <p><u>Mitigation Measures:</u> <i>WQ-4</i> Parking lot pavement, catch basins, and storm drains will be cleaned regularly. <i>Solid waste will be collected from facilities on a regular basis.</i></p>	<p>Franklin Boulevard to Center Parkway, a flood control project (by others), currently under construction, will eliminate 100-year flood hazards.</p> <p>From Union House Creek to Franklin Blvd., the LPAP2 line would be constructed on a fill embankment above the 100-year flood elevation. Culverts through the embankment would convey runoff/flood flows.</p> <p>The Franklin PNR lot would be constructed above the 100-year flood elevation. The south berm of a large detention basin at Franklin Station would be modified. Flood storage reduction would be avoided.</p> <p>Runoff from the LPAP2 would be negligible.</p> <p><u>Mitigation Measures:</u> <i>WQ-1</i> <i>Develop final floodplain mitigation plan in consultation with ACOE, the Central Valley Flood Protection Board, and SAFCA.</i> <i>WQ-2</i> <i>In the unlikely event the SSCS project is delayed and floodplain protection is not in place, mitigation measures will be incorporated into the LPAP2 design to minimize impacts due to potential flooding.</i> <i>WQ-3</i> For fill in 100-year floodplain either (1) excavate compensating floodplain storage equal to the amount removed, or (2) pay a mitigation fee to SAFCA.</p>

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			<i>WQ-4 Parking lot pavements, catch basins, and storm drains will be cleaned regularly. Solid waste will be collected from facilities on a regular basis.</i>
Land Use and Planning Section 4.10	The No-Action Alternative would support a long-term dispersed pattern of development in the South Sacramento Corridor.	<p>The TSM Alternative would require the acquisition of approximately 16.7 acres of land to construct one bus park-and-ride (PNR) lot within the study area.</p> <p>Approximately 4.0 acres of non-residential would be acquired.</p> <p><u>Design Requirements/RT Practices:</u> RT will coordinate with the City and County of Sacramento and the City of Elk Grove to ensure that project facilities would be consistent with land use planning processes and zoning ordinance controls.</p> <p><u>Mitigation Measures:</u> None required.</p>	<p>An estimated 53.6 to 71.2 acres would be required for construction of the LPAP2 alignment, stations, PNR lots, replacement college parking, and optional shuttle lot. Approximately 14.6 acres of Cosumnes River College land <i>and</i> 19.1 acres of SRCSD bufferlands would be converted to public right-of-way. An additional 8.9 acres would come from the UPRR.</p> <p><u>Design Requirements/RT Practices:</u> RT will coordinate with the City and County of Sacramento to ensure that project facilities would be consistent with land use planning processes and zoning ordinance controls.</p> <p>RT will work closely with local jurisdictions to encourage transit oriented development around appropriate stations consistent with RT's ongoing TLC program.</p> <p>RT will work with SRCSD to ensure that project facilities are compatible with SRCSD's <i>Land Use Management Plan</i>.</p> <p><u>Mitigation Measures:</u> None required.</p>
Mineral and Energy Resources Section 4.11	Direct energy consumption would be highest for the No-Action Alternative.	Although transit vehicle miles of travel (VMT) increase, these increases are more than offset by a corresponding decrease in auto/truck VMT as travelers shift to transit and drive less. Net energy consumption for vehicle operations (i.e., direct energy consumption) is lower than the No-Action Alternative and higher than the LPAP2.	Although transit vehicle miles of travel (VMT) increase with the LPAP2, these increases are more than offset by a corresponding decrease in auto/truck VMT as travelers shift to transit and drive less. Energy consumption for vehicle operations (both total and direct energy consumption) is lowest for the LPAP2.

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		<p>Similarly, when total system energy is considered, the TSM Alternative consumes less energy than the No-Action Alternative and slightly more energy than the LPAP2.</p> <p><u>Design Requirements/RT Practices:</u> Facilities and equipment will be designed and specified to ensure energy efficiency.</p> <p><u>Mitigation Measures:</u> None required.</p>	<p>Overall it can be concluded that the LPAP2 would have a negligible impact on transportation system energy consumption for vehicle operations. Auto/truck travel would remain the dominant transportation mode in the region and the changes in total VMT and energy consumption would be relatively small from a system perspective.</p> <p><u>Design Requirements/RT Practices:</u> Facilities and equipment will be designed and specified to ensure energy efficiency.</p> <p><u>Mitigation Measures:</u> None required.</p>
<p>Noise and Vibration Section 4.12</p>	<p>No impact.</p>	<p>No impacts.</p> <p>The TSM Alternative consists of additional bus service and construction of one park and ride lot. These improvements are not expected to generate any noise and vibration impacts approaching or exceeding the FTA's thresholds.</p>	<p><u>Noise</u></p> <p>FTA noise impacts along the LPAP2 alignment would vary depending on the design options selected. Noise impacts along the full LPAP2 alignment would vary from <i>348 (57 "Moderate"</i> and <i>291 "Severe")</i> to <i>378 (53 "Moderate"</i> and <i>325 "Severe")</i>.</p> <p><u>Design Requirements/RT Practices:</u> Maintain track and vehicles regularly to reduce noise levels from vehicles.</p> <p><u>Mitigation Measures:</u> <i>N&V-1</i> Noise barriers will be constructed to mitigate noise impacts in compliance with FTA <i>and RT</i> criteria. <i>N&V-2</i> <i>Sound insulation could be considered for residences near the Meadowview Road At-Grade Option and N. Laguna Drive, south of CRB.</i> <i>N&V-3</i> RT will coordinate mitigation with SAFCA, ACOE, and City of Sacramento to address barrier needs of</p>

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Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
			<p>South Sacramento Corridor Phase 2, flood control, and CRB Widening and Extension projects.</p> <p><i>N&V-4 Other potential mitigation measures include minimizing the wheel impacts at crossovers and various approaches, implementing an ongoing rail grinding program along with the recommended wheel profile to reduce the incidence of wheel squeal.</i></p> <p><i>N&V-5 Bell sound levels at rail/roadway crossings will be set to minimum sound levels allowed by the CPUC. RT will specify that bells with easily adjustable volumes and adjustable ring rates be installed.</i></p> <p><u>Vibration:</u> Vibration impacts along the full LPAP2 alignment would <i>be the same for all</i> design options selected, with the number of homes affected <i>being 29</i>.</p> <p><u>Mitigation Measures:</u> <i>N&V-6 Ballast mats would be used to reduce vibration levels in sensitive areas.</i></p>
<p>Population, Housing and Environmental Justice</p> <p>Section 4.13</p>	<p>No impact.</p>	<p><u>Property Acquisitions and Displacements:</u> Approximately 4.0 acres of non-residential property would be acquired.</p> <p><u>Neighborhoods and Businesses:</u> Additional bus services</p>	<p><u>Property Acquisitions and Displacements:</u> No business relocation would be required. <i>Two single-family homes would be acquired in the Morrison Creek area.</i> If selected, the Center Parkway Pedestrian Overcrossing Option would require relocation of one single-family home.</p> <p>Relocation assistance would be provided consistent with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and RT policy.</p> <p><u>Neighborhoods and Businesses:</u> The LPAP2 service would</p>

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Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
		<p>would improve local and regional linkages among neighborhoods, businesses and community facilities in comparison to the No-Action Alternative.</p> <p><u>Environmental Justice:</u> Improved bus service and one new bus PNR lot would be provided. There would not be a disproportionate distribution of these benefits to certain groups. There would be no adverse impacts or disproportionate distribution of adverse impacts to low-income or minority groups.</p> <p><u>Mitigation Measures:</u> None required.</p>	<p>improve local and regional linkages among neighborhoods, businesses and community facilities with improved travel times in comparison to the No-Action and TSM Alternatives.</p> <p><u>Environmental Justice:</u> The LPAP2 service would improve access to regional employment, education, medical, and retail centers for low-income and minority populations. There would not be a disproportionate distribution of these benefits to certain groups. There would be no adverse impacts or disproportionate distribution of adverse impacts to low-income or minority groups.</p> <p><u>Mitigation Measures:</u> None required.</p>
<p>Public Services and Facilities Section 4.14</p>	<p>No impact.</p>	<p>Ten community facilities (including recreation facilities) would realize direct benefits of improved bus service. Enhanced bus service from the Calvine/SR 99 PNR to the Meadowview Road LRT Station and express bus service from Elk Grove and the CRC transit center would facilitate access between the study area and community facilities located downtown and in other regional activity centers.</p> <p><u>Mitigation Measures:</u> None required.</p>	<p>Ten community facilities (including recreation facilities) would realize direct benefits of improved transit access as a result of the LPAP2. Extending LRT service would also improve accessibility to community facilities in downtown Sacramento and other regional activity centers.</p> <p><u>Mitigation Measures:</u> None required.</p>
<p>Parks & Recreation Section 4.15</p>	<p>No impact.</p>	<p>Four park and recreational facilities would realize direct benefits of improved bus service. Enhanced bus service from the Calvine/SR 99 PNR to the Meadowview Road LRT Station and express bus service from Elk Grove and the CRC transit center would facilitate access between the study area and park and recreational facilities located downtown and in other regional activity centers.</p>	<p>Four park and recreational facilities would realize direct benefits of improved transit access. The LPAP2 service would also improve accessibility to park and recreational facilities in downtown Sacramento and other regional activity centers.</p> <p>The <i>LRT bridge over CRB</i> would incorporate part of the <i>CRC College stadium</i> berm in the abutment. There would be no adverse impact on access to or operations and use of the stadium under either the at-grade or flyover options.</p>

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Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
		Mitigation Measures: None required.	Mitigation Measures: <i>None Required.</i>
Safety & Security Section 4.16	No impact.	<p>Increased bus services and a new PNR lot would require increased security services. The alternative would not expose children to disproportionate environmental health or safety risk.</p> <p>Mitigation Measures: <i>TS-1</i> RT security services would extend to include increased bus services.</p>	<p>New rail stations would create activity centers and PNR lot traffic, with potential for safety and/or security incidents. Large parking areas would increase the risk of vandalism to vehicles. Circulation of autos and pedestrians in PNR lots would create potential for auto-pedestrian conflicts. The reduction of corridor auto traffic is expected to have a beneficial impact on motor vehicle accident rates and resulting injuries. The LPAP2 tracks and stations would be adjacent to an active freight railroad and would traverse high volume roadways that require crossings by pedestrians and vehicular traffic, increasing the potential for accidents. The alternative would not expose children to disproportionate environmental health or safety risk. At-grade rail crossings would be signalized and gated and would comply with Public Utilities Commission regulations.</p> <p>Mitigation Measures:</p> <ul style="list-style-type: none"> <i>S-1</i> Work with emergency service providers to develop alternative sources and adjust service areas and destinations as necessary to maintain emergency service coverage and response times following implementation of the new LPAP2 service. <i>S-2</i> Provide safety and security services by increasing contract security services and assigned law enforcement personnel. <i>S-3</i> Expand fire safety and emergency response training to include five districts that will be responsible for providing these services. <i>S-4</i> Invite public participation regarding station design details during the final design phase of the project

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			to identify and address safety and security concerns.
Utilities Section 4.17	No impact.	<p>The proposed park-and-ride lot may require minor utility relocations or new utility services, potentially affecting existing and planned utilities. Affected utilities would be relocated after consultation with their owners. It is anticipated that any required utility relocations could be managed with only short-term disruptions to utility service.</p> <p><u>Design Requirements/RT Practices:</u> Careful and periodic coordination with all utility providers will continue to identify potential conflicts and formulate strategies to avoid potential problems. If disruptions to utility service are required, they will be restricted in time duration and geographic extent. Careful scheduling of these disruptions and prior notification of adjacent properties that would be affected by temporary service disruptions will mitigate the impact.</p> <p><u>Mitigation Measures:</u> None required.</p>	<p>The construction of light rail tracks could affect underground and above-ground utilities throughout the alignment. To minimize or eliminate interruption in utility service to customers, a set of detailed plans would be submitted to utility providers for their review and comment prior to the onset of any relocation work.</p> <p>Some utilities will be moved to the edges of the LPAP2 LRT right-of-way. If right-of-way is not available, some utilities would be relocated to easements in adjacent properties. A PGE gas line between Meadowview Road and Morrison Creek will be relocated from the west side of the UPRR right-of-way to the Detroit Boulevard right-of-way. A branch of this line will require and easement through private property.</p> <p>Underground gas, water and sanitary sewer utilities crossing the trackway would be provided with additional protection including minimum depth of ground cover and possibly steel casings in accordance with state and federal pipeline safety laws.</p> <p><u>Design Requirements/RT Practices:</u> Careful and periodic coordination with all utility providers will continue during the preliminary engineering, final design, and construction stages of the LPAP2 to identify any potential conflicts and formulate strategies to overcome potential problems. If disruptions to utility service are required, they would be restricted in time duration and geographic extent. Careful scheduling of these disruptions and prior notification of adjacent properties that would be affected by temporary service disruptions will mitigate the impact.</p> <p><u>Mitigation Measures:</u> None required.</p>

Table S-3: Summary of Short-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures			
Impact Category/ Section in SFEIS/SFEIR	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2) Alternative
Aesthetics Section 5.2.1	No impact.	<p>Construction equipment would introduce a temporary visual change to the area, including stockpiling of soils and materials, use/staging of heavy equipment, and possible night-time lighting.</p> <p><u>Mitigation Measures:</u></p> <p><i>CA-1</i> The contractor will be required to maintain the site in an orderly manner, removing trash, waste, and securing equipment and vehicles at the close of each day's operation.</p> <p><i>CA-2</i> To reduce glare from nighttime lighting, RT will require contractor to direct lighting onto the immediate construction area and away from residences and traffic lanes.</p>	<p>Construction equipment would introduce a temporary visual change to the area, including stockpiling of soils and materials, use/staging of heavy equipment, and possible night-time lighting.</p> <p><u>Mitigation Measures:</u></p> <p><i>CA-1</i> The contractor will be required to maintain the site in an orderly manner, removing trash, waste, and securing equipment and vehicles at the close of each day's operation.</p> <p><i>CA-2</i> To reduce glare from nighttime lighting, RT will require contractor to direct lighting onto the immediate construction area and away from residences and traffic lanes.</p> <p><i>CA-3</i> <i>To reduce dust, the contractor would be required to use water trucks during grading to keep the ground moist.</i></p>
Agriculture Section 5.2.2	No impact.	<p>It is not anticipated that construction activities would disturb agricultural land, crops or soils.</p> <p><u>Mitigation Measures:</u> None required</p>	<p>It is not anticipated that construction activities would disturb agricultural land, crops or soils.</p> <p><u>Mitigation Measures:</u> None required</p>
Air Quality Section 5.2.3	No impact.	<p>Construction would generate short-term emissions of dust, fumes, equipment exhaust, pollutants and other air contaminants. PM10 would be the air pollutant of greatest concern. Under the "worst-case" construction scenario, <i>construction</i> emissions are <i>not</i> anticipated to exceed the SMAQMD and federal thresholds. <i>However, mitigation measures are recommended to reduce construction emissions.</i></p>	<p>Construction would generate short-term emissions of dust, fumes, equipment exhaust, pollutants and other air contaminants. PM10 would be the air pollutant of greatest concern. Construction impacts were evaluated based on a "worst-case" construction scenario in which track construction, station construction, grade separation, and bridge structure construction would occur concurrently, which is highly unlikely. Under this</p>

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		<p><u>Mitigation Measures:</u></p> <p><i>CAQ-1</i> RT practices include site-sweeping, site-wetting, washing or sweeping site-access points and covering or watering on-site stockpiles.</p> <p><i>CAQ-8</i> Operations on unpaved surfaces will be suspended when winds exceed 25 mph.</p> <p><i>CAQ-9</i> Traffic speeds <i>on unpaved roads</i> will be limited to 15mph.</p> <p><i>CAQ-10</i> Operations would be suspended during first and second stage smog alerts.</p> <p><i>CAQ-11</i> Truck loading zones will be maintained in the construction area.</p> <p><i>CAQ-12</i> Temporary traffic control will be provided.</p>	<p>assumption, <i>construction</i> emissions are <i>not</i> anticipated to exceed the SMAQMD and federal thresholds. <i>However, mitigation measures are recommended to reduce construction emissions.</i></p> <p><u>Mitigation Measures:</u></p> <p><i>CAQ-1</i> Construction area and vicinity will be swept and watered at least twice daily.</p> <p><i>CAQ-2</i> Unpaved roads, parking and staging areas will be watered at least once every two hours of active operations.</p> <p><i>CAQ-3</i> Site access points will be swept/washed within 30 minutes of visible dirt deposition.</p> <p><i>CAQ-4</i> On-site stockpiles of debris or dirt will be enclosed, covered or watered at least twice daily.</p> <p><i>CAQ-5</i> All haul trucks hauling materials will be covered and will maintain at least two feet of freeboard.</p> <p><i>CAQ-6</i> Haul trucks will have the capacity of no less than 12.75 cubic yards.</p> <p><i>CAQ-7</i> At least 80 percent of inactive disturbed surface areas will be watered on a daily basis when there is evidence of wind-driven fugitive dust.</p> <p><i>CAQ-8</i> Operations on any unpaved surfaces will be suspended when winds exceed 25 mph.</p> <p><i>CAQ-9</i> Traffic speeds on unpaved roads will be limited to 15 miles per hour.</p>

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		<p><i>CAQ-13</i> Best efforts will be used to limit truck idling to no more than two minutes.</p> <p><i>CAQ-14</i> Non-toxic soil stabilizers will be applied to inactive construction areas.</p> <p><i>CAQ-15</i> Submit to SMAQMD for approval a plan to achieve a project-wide fleet-average reduction of roughly 20% for NO_x and approximately 45% for PM₁₀ (compared to the most recent CARB fleet average at time of construction).</p> <p><i>CAQ-16</i> Submit to SMAQMD an inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that would be used 40 or more hours during any part of construction phase. Update and submit the inventory monthly.</p> <p><i>CAQ-17</i> Off-road diesel-powered equipment emissions will not exceed 40% opacity for more than three minutes in any one hour, or else it will be repaired immediately and the SMAQMD will be notified within 48 hours. A visual survey of all in-operation equipment will be made at least weekly, and a monthly summary will be submitted.</p>	<p><i>CAQ-10</i> Operations on any unpaved surfaces will be suspended during first and second stage smog alerts.</p> <p><i>CAQ-11</i> Truck loading zones will be maintained in the construction area.</p> <p><i>CAQ-12</i> Temporary traffic control will be provided during all phases of construction activities to improve traffic flow.</p> <p><i>CAQ-13</i> Best efforts will be used to limit truck idling to no more than two minutes.</p> <p><i>CAQ-14</i> Non-toxic soil stabilizers (according to manufacturers' specifications) will be applied to all inactive construction areas.</p> <p><i>CAQ-15</i> A plan subject to approval by the SMAQMD will be prepared to show that heavy-duty off-road vehicles used during construction would achieve a project-wide fleet-average reduction of approximately 20 percent for NO_x and approximately 45 percent for PM₁₀ when compared to most recent CARB fleet average at time of construction.</p> <p><i>CAQ-16</i> A comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that would be used an aggregate of 40 or more hours during any portion of the construction phase will be submitted to the SMAQMD.</p> <p><i>CAQ-17</i> Emissions from all off-road diesel-powered equipment used during construction will not exceed 40 percent opacity for more than three minutes in any one hour.</p>

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Biological Resources Section 5.2.4	No impact.	Construction of PNR lots may disturb non-native grassland that provide suitable habitat for the western burrowing owl. No wetland areas would be affected. Natural resources may be adversely affected by construction dust, construction equipment emissions, increased runoff and soil erosion, and construction noise. <u>Mitigation Measures:</u> <i>CB-17</i> Where possible, protect by a 50-foot buffer zone (ESA) with exclusionary fencing habitat for vernal pool fairy shrimp, Midvalley fairy shrimp, vernal pool tadpole shrimp, and California linderiella. <i>CB-23</i> Pre-construction survey of all project affected aquatic habitat no more than 24 hours prior to instream construction or disturbance of riparian vegetation. If western pond turtles are found, on-site monitoring and possible relocation shall be implemented. <i>CB-24</i> Construction in GGS habitat is preferably from May 1 to October 1. If between October 2 and April 30 USFWS may require additional measures.	Approximately 0.15 acre of wetlands/waters would be temporarily disturbed at Morrison Creek and 0.05 acre of wetlands/waters at Morrison Creek/Union House Creek. Construction activities and related impacts may disturb vernal pool, riparian and non-native grassland natural communities that provide suitable habitat for up to 19 special-status species including four invertebrates, two reptiles and 13 bird species. There is no confirmed evidence that any or all of these species are present in the project area or would be present at the time of construction. All sensitive habitat and wetland areas would be identified for avoidance during project design. <u>Mitigation Measures:</u> <i>CB-1</i> <i>Include a copy of the Biological Opinion within solicitations for design and construction, making the primary contractor responsible for implementation.</i> <i>CB-2</i> <i>Implement measures consistent with Best Management Practices (BMPs), including Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) to minimize effects to giant garter snake and prevent pollution of streams, waterways, and other bodies of water during construction, to prevent sedimentation from entering Environmentally Sensitive Areas (ESAs), and to reduce erosion, dust, noise, and other deleterious aspects of construction related</i>

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		<p><i>CB-25</i> Where possible, protect giant garter snake (GGS) habitat by a 200-foot buffer zone (ESA) with exclusionary fencing.</p> <p><i>CB-26</i> Best management practices for water quality shall be implemented.</p> <p><i>CB-28</i> Survey for GGS 24 hours prior to construction.</p> <p><i>CB-30</i> A qualified, USFWS-approved biological monitor shall be present during construction within suitable habitat. If a snake is encountered, all construction activities in the immediate area shall be halted until appropriate corrective measures are implemented.</p> <p><i>CB-41</i> Pre-construction survey for western burrowing owls and burrows within 330 feet no more than two weeks before construction.</p> <p><i>CB-42</i> If active burrows are located, a no-disturbance buffer will be established around each active burrow. The size of the buffer will be determined through CDFG.</p> <p><i>CB-43</i> If adverse effects to occupied burrows are unavoidable, the owls shall be passively relocated using techniques approved by CDFG.</p>	<p><i>activities. BMPs may include, but are not limited to, silt fencing, temporary berms, restrictions on cleaning equipment in or near ESAs, installation of vegetative strips, and temporary sediment disposal. Runoff from dust control and hazardous materials will be retained on the construction site and prevented from flowing into the ESAs.</i></p> <p><i>CB-3</i> Clearing and grubbing procedures that specify that only trees and plants designated for removal shall be removed.</p> <p><i>CB-4</i> Excavation techniques would ensure stability of subsurface materials as well as the retention of excavated materials within the construction areas.</p> <p><i>CB-5</i> Construction within wetlands would be avoided during the rainy season.</p> <p><i>CB-6</i> Materials and fluids generated by construction activities would be placed at least 100 feet from wetland areas or drainages until they could be disposed of at a permitted site.</p> <p><i>CB-7</i> Post-construction, remove all temporary fill/debris. Restore disturbed areas to pre-project conditions, using native grass seed mixes.</p> <p><i>CB-8,9</i> Install high visibility fencing around habitats of federally listed species to identify and protect designated ESAs.</p> <p><i>CB-10</i> A qualified, USFWS-approved biological monitor shall be present during construction within suitable habitat. If a snake is encountered, all construction activities in the</p>

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			<p>immediate area shall be halted until appropriate corrective measures are implemented.</p> <p><i>CB-11 Implement a Worker Environmental Awareness Training Program for construction personnel to be conducted by the USFWS-approved biologist.</i></p> <p><i>CB-12 The number and size of access roads and staging areas, and the total area of project activities will be restricted to the minimum necessary for the duration of construction activities.</i></p> <p><i>CB-13 All food-related trash items must be disposed of in closed containers and removed at the end of each work day.</i></p> <p><i>CB-14 A post-construction walkthrough will be conducted to assess whether any damage occurred to vegetation within buffer areas. Damage may include accidental cutting of vegetation or visible physical damage to roots, stems, and leaves. If damage is observed, vegetation within the buffer areas will be restored with appropriate native plant species.</i></p> <p><i>CB-15 RT will maintain and monitor the project site for one (1) year following the completion of construction and restoration activities.</i></p> <p><i>CB-16 Measures will be taken by the contractor to avoid the introduction of new noxious weeds and the spread of weeds previously documented at the project area.</i></p>

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			<p><i>Special-Status Wildlife</i></p> <p><i>Vernal pool fairy shrimp, Midvalley fairy shrimp, Vernal pool tadpole shrimp, and California linderella</i></p> <p><i>CB-17</i> Where possible, protect by a 50-foot buffer zone (ESA) with exclusionary fencing habitat for vernal pool fairy shrimp, Midvalley fairy shrimp, vernal pool tadpole shrimp, and California linderella.</p> <p><i>Valley Elderberry Longhorn Beetle</i></p> <p><i>CB-18</i> Prior to construction, RT shall conduct a survey to assess the status of existing elderberry shrubs within the project site.</p> <p><i>CB-19</i> Construction shall be prohibited within 100 ft. of elderberry plants during beetle emergence and mating period.</p> <p><i>CB-20</i> No application of herbicides, insecticides, and/or other chemical agents shall occur within 100 feet of elderberry plants or where they might drift of wash into the area of elderberry plants.</p> <p><i>CB-21</i> Protective fencing shall be established around all shrubs that are not removed prior to initiating and construction activities on the site.</p> <p><i>CB-22</i> Post-construction walkthrough will be conducted to assess whether any damage occurred to vegetation within the buffer areas.</p> <p><i>Western Pond Turtle</i></p> <p><i>CB-23</i> Pre-construction survey of all project affected aquatic habitat no more than 24 hours prior to</p>

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			<p>instream construction or disturbance of riparian vegetation. If western pond turtles are found, on-site monitoring and possible relocation shall be implemented.</p> <p><i>Giant Garter Snake</i></p> <p><i>CB-24</i> Construction in GGS habitat is preferably from May 1 to October 1. If between October 2 and April 30 USFWS may require additional measures.</p> <p><i>CB-25</i> <i>Where possible, giant garter snake habitat will be protected by a 200-foot buffer zone.</i></p> <p><i>CB-26</i> <i>Best management practices for water quality will be implemented during construction.</i></p> <p><i>CB-27</i> Any dewatered GGS habitat shall remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling.</p> <p><i>CB-28</i> Survey for GGS 24 hours prior to construction.</p> <p><i>CB-29</i> <i>Appropriate netting will be used for erosion control and other purposes to ensure that the giant garter snake does not get trapped or become entangled.</i></p> <p><i>CB-30</i> <i>A USFWS-approved biological monitor shall be present during construction within suitable habitat.</i></p> <p><i>CB-31</i> <i>Clearing will be confined to the minimal area necessary to facilitate construction activities.</i></p> <p><i>CB-32</i> <i>Following completion of construction, all temporary fill and construction debris will be removed from the project and disturbed areas</i></p>

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			<p><i>will be restored to pre-project conditions.</i></p> <p><i>CB-33 RT will compensate for project-related temporary impacts to giant garter snake habitat by purchasing the equivalent of 8.44 acres of giant garter snake habitat credits. All temporary effects will be compensated at a 1:1 ratio.</i></p> <p><i>Nesting Migratory and Special-Status Birds, Including Raptors</i></p> <p><i>CB-34</i> If construction or tree removal will occur between February and August, preconstruction surveys for migratory bird, raptor, or special-status birds nests will be conducted within 0.25 mile of the project area.</p> <p><i>CB-35</i> <i>Surveys shall be conducted no more than 30 days prior to the initiation of construction activities.</i></p> <p><i>CB-36</i> If active nests are found, consult with USFWS and CDFG to develop avoidance/minimization measures.</p> <p><i>CB-37</i> Raptor or migratory bird nest trees shall be removed outside of the nesting season (February through August), or after nest is empty and adult and young birds leave the tree.</p> <p><i>CB-38</i> <i>All natural communities and wetland areas outside the construction zone that could be affected will be temporarily fenced off using high visibility fencing and designated as ESAs.</i></p>

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			<p><i>Swainson's Hawk</i></p> <p><i>CB-39</i> Annual survey for Swainson's hawk nests from March-August 15. If nests are discovered, consult with CDFG.</p> <p><i>Western Burrowing Owl</i></p> <p><i>CB-40</i> In accordance with the Staff Report on Burrowing Owl Mitigation the following should be considered impacts; disturbance within 160 ft of an occupied burrow, destruction of occupied natural and artificial burrows, and destruction and/or degradation of foraging habitat adjacent (within 330 ft) of to an occupied burrow(s).</p> <p><i>CB-41</i> Pre-construction survey for western burrowing owls and burrows within 330 feet no more than two weeks before construction.</p> <p><i>CB-42</i> If active burrows are located, a no-disturbance buffer will be established around each active burrow. The size of the buffer will be determined through CDFG.</p> <p><i>CB-43</i> If adverse effects to occupied burrows are unavoidable, the owls shall be passively relocated using techniques approved by CDFG.</p>
Cultural Resources Section 5.2.5	No impact.	<p>Although not anticipated, construction activities could result in loss or degradation of previously undiscovered cultural resources.</p> <p><u>Mitigation Measures:</u></p> <p><i>CC-1</i> If cultural materials are unearthed during construction, work in the vicinity would be</p>	<p>Although not anticipated, construction activities could result in loss or degradation of previously undiscovered cultural resources.</p> <p><u>Mitigation Measures:</u></p> <p><i>CC-1</i> If cultural materials are unearthed during construction, work in the vicinity would be</p>

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		<p><i>halted until a qualified archaeologist can assess their significance.</i></p> <p><i>CC-2 If unanticipated archaeological resources are encountered during construction, they would be addressed in consultation with OHP, in accordance with an archaeological treatment plan to be developed in consultation with OHP.</i></p>	<p><i>halted until a qualified archaeologist can assess their significance.</i></p> <p><i>CC-2 If unanticipated archaeological resources are encountered during construction, they would be addressed in consultation with OHP, in accordance with an archaeological treatment plan to be developed in consultation with OHP.</i></p>
Employment Section 5.2.6	No impact.	<p>Compared with the No-Action Alternative, the TSM Alternative would generate <i>230</i> on-site full-time construction positions (person years of employment [PYE]) and <i>370</i> total positions (PYE).</p> <p><u>Mitigation Measures:</u> None required.</p>	<p>LPAP2 would generate <i>1,100</i> on-site full-time construction positions (PYE) and <i>1,700</i> total positions (PYE), as compared to the No-Action Alternative.</p> <p><u>Mitigation Measures:</u> None required.</p>
Geology, Soils and Seismicity Section 5.2.7	No impact.	<p>Weak and/or compressible soils or expansive soil when present can adversely affect the PNR lot. Shallow groundwater could affect earthwork and construction and the service PNR lots. Soil erosion can damage existing structures and can discharge sediment to waterways.</p> <p><u>Mitigation Measures:</u></p> <p><i>CG&S-1</i> Geotechnical studies in final design will incorporate requirements into the final design and construction requirements. Design requirements likely to be implemented include excavation and replacement (or treatment) of soil, use of synthetic material to reinforce weak soils and deep foundations.</p>	<p>Weak and/or compressible soils or expansive soil can adversely affect the structures, pavements and slabs on grade. Shallow groundwater could affect earthwork and construction and the service of floor slabs and roadbed/hardscape subjected to traffic load. Soil erosion can damage existing structures and can discharge sediment to waterways. Additional loads on existing slopes could result in slope instability.</p> <p><u>Mitigation Measures:</u></p> <p><i>CG&S-1</i> Geotechnical studies in final design will incorporate requirements into the final design and construction requirements. Design requirements likely to be implemented include excavation and replacement (or treatment) of soil, use of synthetic material to reinforce weak soils and deep foundations, modification or re-grading of slopes, increased set-backs and clearance from slopes, vegetation of slopes,</p>

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			and lining of channels.
Hazardous Wastes Section 5.2.8	No impact.	<p>Previously unidentified contamination may be encountered.</p> <p><u>Mitigation Measures:</u></p> <p><i>CHW-1</i> Walk-through site reconnaissance will be conducted for each of the site areas to identify any additional evidence of contamination.</p> <p><i>CHW-2</i> A review will be conducted of the remediation status of the sites listed in Table 4.8-1. If remediation activities will be complete before construction of the project, then no further mitigation will be necessary. If remediation would not be completed prior to project construction, then an alternate mitigation plan will be prepared and implemented.</p> <p><i>CHW-3</i> A site specific evaluation will be made of any known and suspected contaminated sites that would be distributed by construction operations before any soil is removed from affected areas for construction, using the following procedure: 1) implementation of a Worker Health and Safety Plan; 2) preparation of a site specific work plan specifying the proposed location for surface samples or soil borings or trenches; 3) soil boring or trenching and sample collection; 4) laboratory analysis of samples; and 5) preparation of a findings and recommendations report.</p>	<p>Previously unidentified contamination may be encountered.</p> <p><u>Mitigation Measures:</u></p> <p><i>CHW-1</i> Walk-through site reconnaissance will be conducted for each of the site areas to identify any additional evidence of contamination.</p> <p><i>CHW-2</i> A review will be conducted of the remediation status of the sites listed in Table 4.8-1. If remediation activities will be complete before construction of the project, then no further mitigation will be necessary. If remediation would not be completed prior to project construction, then an alternate mitigation plan will be prepared and implemented.</p> <p><i>CHW-3</i> A site specific evaluation will be made of any known and suspected contaminated sites that would be distributed by construction operations before any soil is removed from affected areas for construction, using the following procedure: 1) implementation of a Worker Health and Safety Plan; 2) preparation of a site specific work plan specifying the proposed location for surface samples or soil borings or trenches; 3) soil boring or trenching and sample collection; 4) laboratory analysis of samples; and 5) preparation of a findings and recommendations report.</p>

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		<p><i>CHW-4</i> If the site-specific evaluations determine that contaminants are present, RT will determine the type and extent of contamination and will prepare and implement a remediation plan to avoid risks to public health and safety.</p> <p><i>CHW-5</i> RT will notify the State Department of Toxic Substances Control, Sacramento County Environmental Health Department and the local fire department of any contaminants encountered during construction.</p>	<p><i>CHW-4</i> If the site-specific evaluations determine that contaminants are present, RT will determine the type and extent of contamination and will prepare and implement a remediation plan to avoid risks to public health and safety.</p> <p><i>CHW-5</i> RT will notify the State Department of Toxic Substances Control, Sacramento County Environmental Health Department and the local fire department of any contaminants encountered during construction.</p>
<p>Hydrology, Floodplain and Water Quality Section 5.2.9</p>	No impact.	<p>Construction activities would increase the sediment load in stormwater and disturb one or more acres of land.</p> <p><u>Mitigation Measures:</u> <i>CHF&Q-1</i> The contractor will prepare a SWPPP identifying Best Management Practices to reduce water quality impacts.</p> <p><i>CHF&Q-3</i> If groundwater is encountered, dewatering will be conducted and contaminated effluent disposed of per applicable regulations.</p>	<p>Construction activities would increase the sediment load in stormwater and disturb one or more acres of land. Modification of the berm of Franklin Station detention basin could result in the temporary loss of flood storage.</p> <p><u>Mitigation Measures:</u> <i>CHF&Q-1</i> The contractor will prepare a SWPPP identifying Best Management Practices to reduce water quality impacts.</p> <p><i>CHF&Q-2</i> RT will coordinate with SRCSD and the City of Sacramento regarding impacts to the detention basin and to maintain flood storage during construction.</p> <p><i>CHF&Q-3</i> If groundwater is encountered, dewatering will be conducted and contaminated effluent disposed of per applicable regulations.</p>

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Impact Category/ Section in SFEIS/SFEIR	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2) Alternative
Land Use Section 5.2.10	No impact.	No impact.	No impact.
Mineral and Energy Resources Section 5.2.11	No impact.	<p>Minerals: No important minerals have been identified in the project area.</p> <p>Energy Resources: Energy use would represent a small portion of the total energy consumed in the region.</p> <p><u>Mitigation Measures:</u> None required.</p>	<p>Minerals: No important minerals have been identified in the project area.</p> <p>Energy Resources: Construction energy requirements are greater than for the TSM Alternative, but not considered substantial, since, energy use for the project would represent a small portion of the total energy consumed in the region.</p> <p><u>Mitigation Measures:</u> None required.</p>
Neighborhoods and Businesses Section 5.2.12	No impact.	<p>Construction traffic could temporarily disrupt traffic near the new PNR lot. Grading and paving would result in construction noise and vibration, air emissions, and visual changes. These impacts are expected to be very localized and none would have substantial impacts on the neighborhoods or businesses.</p> <p><u>Mitigation Measures:</u> CN&B-1 RT practices for noise and vibration, air quality, transportation and aesthetics are in the respective sections of Chapter 5. No further mitigation is indicated.</p>	<p>Construction traffic would temporarily affect study area neighborhoods due to street closures, rerouting of transit and vehicular traffic, and movements of construction equipment, materials and vehicles. There would be construction noise and vibration, air emissions, and visual changes. Impacts would be localized, temporary and intermittent; none would substantially affect neighborhoods or local businesses.</p> <p><u>Mitigation Measures:</u> CN&B-1 RT practices for noise and vibration, air quality, transportation, and aesthetics are in the respective sections of Chapter 5. No further mitigation is indicated.</p>

Table S-3: Summary of Short-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures			
Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2) Alternative
Noise and Vibration Section 5.2.13	No impacts.	Temporary noise during construction of the park-and-ride (PNR) lot may adversely affect nearby residents. <u>Mitigation Measures:</u> <i>CN&V-1</i> Include specific residential property line noise limits in the construction specifications for this project, and <i>CN&V-2</i> Perform noise monitoring during construction to verify compliance with the limits. <i>CN&V-4</i> Vibration impacts will be mitigated by including numeric limits in the construction specifications, monitoring vibration, and requiring the contractor to follow the specified limits.	Temporary noise during construction of new tracks, stations, and traction power substations may adversely affect nearby residents. Most severe conditions would occur if construction was concurrent with that of the CRB Widening, CRB Extension and levee system improvement projects (by others). <u>Mitigation Measures:</u> <i>CN&V-1</i> Include specific residential property line noise limits in the construction specifications for this project. <i>CN&V-2</i> Perform noise monitoring during construction to verify compliance with the limits. <i>CN&V-3</i> <i>Assure that a complaint resolution procedure is in place to rapidly address any problems that may develop.</i> <i>CN&V-4</i> Vibration impacts will be mitigated by including numeric limits in the construction specifications, monitoring vibration, and requiring the contractor to follow the specified limits.
Parks & Recreation Section 5.2.14	No impact.	The construction of the PNR facility would have no impact on park and recreational facilities in the area.	Construction could involve temporary detours or street closures but are expected to have little or no impact on access to local parks and recreational and facilities. Construction at the Cosumnes River College Stadium berm would not affect access to or operations of the recreational facility.

Table S-3: Summary of Short-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures			
Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2) Alternative
			<u>Mitigation Measures:</u> None required.
Public Services and Facilities Section 5.2.15	No impact.	The construction of the PNR facility would have no impact on parks, recreation and public services and facilities in the area.	Construction could involve temporary detours or street closures but are expected to have little or no impact on access to local public services and facilities. Emergency vehicles would need to observe any short-term road closures and temporary construction detours. <u>Mitigation Measures:</u> <i>CPS-1</i> RT will coordinate with local emergency service providers in developing detour plans. <i>CPS-2</i> Emergency service providers would be provided advance notice of road closures and detour routes.
Safety and Security Section 5.2.16	No impact.	Construction activities could expose construction workers, local residents, and employees to potential safety hazards. <u>Mitigation Measures:</u> <i>CS-1</i> RT will require the contractor submit a safety plan in advance of construction to ensure procedures for the safety of construction workers, local residents, and employees during construction of the TSM Alternative. <i>CS-2</i> Fencing and lighting of construction and staging areas, and recognized safety practice requirements for the utilization of heavy equipment and the movement of construction materials would be implemented to contain construction activities and avoid accidents.	Construction activities could expose construction workers, local residents, and employees to potential safety hazards. <u>Mitigation Measures:</u> <i>CS-1</i> RT will require the contractor submit a safety plan in advance of construction to ensure procedures for the safety of construction workers, local residents, and employees during construction of the LPAP2 Alternative. <i>CS-2</i> Fencing and lighting of construction and staging areas, and recognized safety practice requirements for the utilization of heavy equipment and the movement of construction materials would be implemented to contain construction activities and avoid accidents.

Table S-3: Summary of Short-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures			
Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2) Alternative
Transportation/ Traffic Section 5.2.17	No impact.	Rail and Bus Transit: No impacts on transit services anticipated.	<p>Rail Services: Construction of the connections of existing LRT tracks with new LPAP2 tracks could affect on-going revenue service. To avoid disruption of current LRT operations, construction of these connections will be scheduled during non-revenue hours.</p> <p>Bus Services: Construction of grade crossings would involve closure of cross streets for 24 to 48 hours at a time, temporarily rerouting some bus routes.</p> <p><u>Mitigation Measures:</u></p> <p>Coordinate construction with other major work in the vicinity.</p> <p>Grade-crossing construction that requires street closure will be scheduled so only one crossing in an area is affected at one time</p> <p>Provide the public and transit users advance notice of proposed transit reroutes and any other changes in stops and service.</p> <p>Construction of at-grade crossings will take place during non-peak periods whenever possible, including at night and at normal work hours in residential areas.</p> <p>RT will notify local residents and businesses in advance of proposed construction activity.</p>

Table S-3: Summary of Short-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures			
Impact Category/ Section in <i>SFEIS/SFEIR</i>	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2) Alternative
		<p>Vehicular Traffic: Traffic in the vicinity of the PNR lot could be disrupted by construction equipment and traffic.</p> <p><u>Mitigation Measures:</u></p> <p><i>CT-3,8 RT will coordinate with the City or County to provide advance public notice of traffic detours.</i></p> <p><i>CT-7 Contractors will prepare and implement traffic handling plans.</i></p>	<p>Vehicular Traffic: Traffic could be disrupted by construction equipment and traffic. Construction of LPAP2 improvements would require street closures for 24 to 48 hours at several locations and rerouting of vehicular traffic.</p> <p><u>Mitigation Measures:</u></p> <p><i>CT-1 RT will coordinate construction with other major public or private construction projects within a one-mile radius.</i></p> <p><i>CT-2 Grade-crossing construction would only occur so that one crossing in an area is affected at a time.</i></p> <p><i>CT-3,8 RT will coordinate with the City or County to provide the public advance notice of proposed traffic detours and their duration.</i></p> <p><i>CT-4 Construction of at-grade crossings will take place during non-peak periods whenever possible.</i></p> <p><i>CT-5 RT will notify local residents and businesses in advance of proposed construction activity using techniques identified in the project's public involvement program.</i></p> <p><i>CT-6 RT will communicate and coordinate with the CRC and Los Rios Community College District regarding the time of any street closures during construction of the LPAP2, with particular attention to peak student travel periods.</i></p> <p><i>CT-7 Contractors will be required to prepare and implement traffic handling plans approved by the cities of Sacramento and Elk Grove or Sacramento County.</i></p>

Table S-3: Summary of Short-Term Impacts, Design Requirements/RT Practices, and Proposed Mitigation Measures			
Impact Category/ Section in SFEIS/SFEIR	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2) Alternative
		<p>Parking: Construction workers for the park-and-ride lot would be expected to park on-site. No substantial impact anticipated.</p> <p><u>Mitigation Measures:</u> <i>CT-9</i> Provisions will be incorporated into the construction contracts to avoid parking impacts to residential areas or businesses requiring on-street parking.</p>	<p>Parking: Construction workers for the park-and-ride lots would be expected to park on-site. No substantial impact anticipated.</p> <p><u>Mitigation Measures:</u> <i>CT-9</i> Construction contracts will include provisions to avoid parking impacts to residential areas or businesses requiring on-street parking.</p>
Utilities Section 5.2.18	No impact.	<p>Construction activities may encounter unexpected utilities within the project right-of-way. Relocations of affected utilities will be the responsibility of RT and may require short-term, limited interruptions of service.</p> <p><u>Mitigation Measures:</u> <i>CU-1</i> RT will continue close coordination with all utility providers during construction to identify any potential conflicts and formulate strategies to overcome potential problems. <i>CU-2</i> A set of detailed plans will be submitted to utility providers for their review and comment prior to the onset of any relocation work. <i>CU-3</i> Schedule any service interruptions in advance and ensure appropriate notification to users.</p>	<p>Construction activities may encounter unexpected utilities within the project right-of-way. Relocations of affected utilities will be the responsibility of RT and may require short-term, limited interruptions of service.</p> <p><u>Mitigation Measures:</u> <i>CU-1</i> RT will continue close coordination with all utility providers during construction to identify any potential conflicts and formulate strategies to overcome potential problems. <i>CU-2</i> A set of detailed plans will be submitted to utility providers for their review and comment prior to the onset of any relocation work. <i>CU-3</i> Schedule any service interruptions in advance and ensure appropriate notification to users.</p>

S-6 SUMMARY OF CAPITAL COSTS

Total capital costs for the TSM Alternative, escalated to the year of expenditure, are estimated to be *\$53,067,000*. These costs include contingencies, engineering, and reserve. The principal components of the TSM Alternative are new buses and construction of a park-and-ride lot at Cosumnes River College.

Total capital costs for the LPAP2 (base case), escalated to the year of expenditure, are estimated to be *\$269,920,000*, which is *\$216,853,000* more than the estimated TSM Alternative costs. Table S-3 presents capital costs for the principal components of the LPAP2. See Section 2.6 for costs of project options (such as grade separations) which would add to the project costs.

Table S-4: LPAP2 Capital Cost Estimate by Cost Category	
Element	Cost Estimate (Year of Expenditure dollars)
Guideway and Track Elements	<i>\$43,974,000</i>
Stations, Stops, Terminals, Intermodal	<i>\$44,886,000</i>
Support Facilities: Yards, Shops, Administration	\$0
Sitework & Special Conditions	<i>\$61,822,000</i>
Systems	<i>\$30,044,000</i>
ROW, Land, Existing Improvements	<i>\$14,929,000</i>
Vehicles	\$0
Professional Services	<i>\$42,094,000</i>
Unallocated Contingency	<i>\$32,171,000</i>
Finance Charges	\$0
Total Project Cost	<i>\$269,920,000</i>
Source: RT Financial Forecasting Model, <i>September 2007</i> .	
Notes: Construction costs include <i>15% to 30% contingencies</i> .	
ROW costs include 25% contingency.	

Capital costs for both the TSM and LPAP2 alternatives include the cost of mitigation measures, contingencies, engineering and reserves. Additional vehicles will not be acquired as part of the LPAP2 Project. Vehicle maintenance for LRT vehicles would occur at RT's central maintenance facility at Academy Way. A new maintenance facility will not be required for the LPAP2 Project.

S-7 OPERATING AND MAINTENANCE COSTS

RT's projected 2030 annual operating and maintenance costs *with the LPAP2* is *\$275.2* million (*2007* \$'s). The LPAP2 operating costs are expected to be approximately *\$1.03* million lower than the costs for the TSM Alternative (FY *2007* \$).

S-8 FINANCIAL ANALYSIS AND EVALUATION

The LPAP2 is estimated to cost approximately \$270 million to construct in Year of Expenditure (YOE) dollars. Full funding for the project has been identified from a variety of sources (Table S-4): State Transportation Improvement Program (STIP) funds, Traffic Congestion Relief Program (TCRP) funds, Congestion Mitigation and Air Quality Improvement (CMAQ) funds, community facilities district funds, transit fee district funds, Measure A sales tax/developer fee funds, and FTA Section 5309 New Starts funds. The project is included in the financially constrained SACOG Metropolitan Transportation Plan (MTP). The funding assumptions used for the project and for the RT system as a whole are consistent with the assumptions used in the MTP.

Funding Source	Amount (Year of Expenditure dollars)	Percent of Total Funding
CMAQ	\$7,100,000	2.6%
Laguna Community Facilities District	\$803,250	0.3%
Vineyard Fee District	\$3,989,286	1.5%
STIP	\$4,307,000	1.6%
Measure A Sales Tax/Developer Fee	\$52,760,464	19.5%
TCRP/STIP	\$66,000,000	24.5%
Section 5309 New Starts	\$134,960,000	50.0%
Total	\$269,920,000	100%

Source: RT Financial Forecasting Model, *September 2007, updated July 2008.*

If the LPAP2 were not constructed, and the TSM Alternative were implemented instead, the TSM Alternative would be funded entirely from STIP, CMAQ, and local sources.

The primary funding sources for RT's current bus, LRT, paratransit, and regional rail operations include the following:

- Sacramento County Measure A (one-half cent sales tax),
- The Local Transportation Fund component of the State Transportation Development Act (TDA--one-quarter cent of the State's 7.25 percent sales tax),
- State Transit Assistance Program Funds,
- Measure A funds from the City of Folsom per a trade of state capital dollars,
- City contributions of TDA to pay for RT services,
- Special service (e.g., shuttles, events) revenues,
- Fare revenues,
- Federal Section 5307 formula funds,
- Federal Section 5309 Fixed Guideway funds, and
- Other sources (e.g., advertising, interest earnings).

To fund the operation of the LPAP2, RT would use a mix of funds from these sources.

The financial analysis indicates that RT has the financial capacity to build, operate and maintain the LPAP2, while continuing to operate and maintain the existing transit system. This conclusion is not unqualified, however. As with any financial forecast, there is risk in the uncertainty of future economic conditions. Also, there is some risk that the additional operating and capital funding needed to extend the service may not be identified in the near term.

S-9 ISSUES TO BE RESOLVED/AREAS OF CONTROVERSY

A review of the environmental impacts and mitigation measures for the project alternatives are provided in Chapters 3, 4, and 5 and summarized in this summary and in Chapter 6. As shown in these chapters, adverse environmental impacts are mitigated for the project alternatives and there appear to be no remaining issues to be resolved or areas of controversy.