
South Sacramento Corridor Light Rail Project Phase 2 Extension Project Modifications Initial Study/Environmental Assessment

Sacramento Regional Transit District
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August 2, 2011

South Sacramento Corridor Light Rail Project

Phase 2 Extension Project Modifications

Initial Study/Environmental Assessment

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Summary

S.1 PROJECT OVERVIEW

The Sacramento Regional Transit District (RT) proposes to extend light rail transit (LRT) service approximately 4.3 miles south from the South Sacramento Corridor Phase 1 terminus at Meadowview Road. From the existing Meadowview Station, the Phase 2 extension is envisioned to travel south along the Union Pacific Railroad (UPRR) right-of-way (ROW), turning east and crossing UPRR and Morrison Creek, continuing east to Cosumnes River Boulevard, crossing Franklin Boulevard and Center Parkway at-grade, crossing over Cosumnes River Boulevard and turning south along the western side of Bruceville Road, and terminating at Cosumnes River College (CRC).

The Phase 2 project is expected to have an estimated project cost of \$270 million. Proposed funding for the project would derive from a number of sources, as summarized below in Table S-1.

Table S-1
South Sacramento Corridor Phase 2 Proposed Funding Sources

Funding Source	Amount	Federal, State or Local Funding Source
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	\$7,100,000	Federal (used as local funding share)
FTA Major Fixed Guideway Capital Investment Program (New Starts)	\$135,000,000	Federal
State Transportation Improvement Program (STIP)	\$4,307,000	State
Public Transportation Modernization, Improvement, and Service Enhancement Account (Proposition 1B PTMISEA)	\$18,746,792	State
State-Local Partnership Program Account (Proposition 1B SLPP)	\$7,200,000	State
State Transit Assistance (STA)	\$156,660	State
Traffic Congestion Relief Program (TCRP)	\$8,100,000	State
Internal Financing (COPs, Revenue Bonds) or State Bond funds	\$57,900,000	State/Local
Laguna Community Facilities District	\$1,481,421	Local
Vineyard Financing	\$4,742,444	Local
Measure A Funds (Sacramento Transportation Authority)	\$25,265,683	Local
Grand Total	\$270,000,000	

The Phase 2 project was evaluated by the Federal Transit Administration (FTA) and RT in a Supplemental Final Environmental Impact Statement/Subsequent Final Environmental Impact Report (SFEIS/SFEIR). The SFEIS/SFEIR was approved in December 2008 through the issuance of a Record of Decision by FTA and the filing of a Notice of Determination with the State of California by RT. Since approval of the SFEIS/SFEIR in 2008, a number of needed modifications to the project's design have

been identified by RT. Because these modifications were not evaluated in the SFEIS/SFEIR, the proposed modifications require further environmental evaluation in compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Therefore, the focus of this joint IS/EA is to determine whether the proposed project modifications being advanced by RT may have significant environmental consequences.

The proposed project modifications to the approved Phase 2 project, described in greater detail in Section 2 of this IS/EA, are necessary to allow for greater efficiencies in the construction and operation of the Phase 2 project and to address subsequently-adopted Union Pacific Railroad (UPRR) track separation standards and City of Sacramento General Plan policies. There are five components to the proposed project:

- Realignment of approximately 4,700 feet of the northernmost portion of the Phase 2 extension. Three design options (Design Options A, B, and C) are proposed for this realignment.
- Relocation of a 20-inch PG&E natural gas pipeline that would be disrupted by installation of the RT tracks (applicable to Design Option B only).
- Adjustments to proposed RT ROW to allow for greater separation from Morrison Creek Levee.
- Relocation of Traction Power Substation (TPSS) #10 from original proposed location in the Franklin Station parking lot to a new location across Franklin Boulevard.
- Addition of 400 feet of tailtrack at southern end of alignment.

S.2 ALTERNATIVES

This IS/EA assesses two alternatives: 1) the Phase 2 Extension Project Preferred Alternative as already assessed and approved; and 2) the Modified Phase 2 Preferred Alternative, which contains a number of modifications to the original Phase 2 Preferred Alternative. Since the original Phase 2 Preferred Alternative was already assessed in the SFEIS/SFEIR and approved by the Sacramento Regional Transit District Board, it is the No Action/No Project Alternative. Briefly, the two alternatives assessed in this document are:

Alternative 1 – No Project

This alternative would construct the Phase 2 Extension Project as already assessed in the 2008 SFEIS/SFEIR and approved by the Sacramento Regional Transit District Board without the proposed modifications, and would consist of the following relevant components:

1. The proposed light rail train (LRT) tracks would be constructed approximately 20 feet west of the Union Pacific Railroad (UPRR) mainline tracks which would not comply with UPRR requirements for track separation;
2. The PG&E natural gas pipeline would be installed along the entire length of Detroit Boulevard rather than within an existing utility corridor;
3. The LRT tracks would be constructed immediately adjacent to the Morrison Creek levee and would not comply with requirements of the adopted City of Sacramento General Plan;

4. Traction power substation (TPSS) #10 would be constructed in its originally planned location within the proposed Franklin Station parking lot and optimum power distribution would not be realized; and
5. The tailtracks at the project's southern terminus would not be extended 400 feet to the south and the provision for storage of additional LRT vehicles during non-commute hours would not be accommodated.

Alternative 2 – Modifications to the Phase 2 Extension Project

This alternative would incorporate a number of specific modifications to the original Phase 2 Extension project that was approved in 2008. In addition, there are three design options associated with the component #2, realignment along the UPRR right-of-way, that are considered within this alternative:

1. Realignment of approximately 4,700 feet of the northernmost portion of the Phase 2 extension adjacent to the UPRR tracks, in accordance with UPRR requirements for track separation. Three potential alignment options are under consideration for this modification;
 - *Design Option A: Realignment of RT Tracks 33 Feet Westward, Minimum 53-Foot Track Separation.* This design option would shift both of the RT tracks to the west to comply with UPRR's separation requirement. The proposed realignment would locate the RT tracks approximately 30 feet west of the SMUD power lines that follows the western portion of the UPRR corridor. This realignment would require the acquisition of additional ROW to the west of the original alignment. In some cases, existing residences could be as little as 10 feet from the proposed LRT tracks. This design option would also include the placement of a crossover switch along this portion of the alignment.
 - *Design Option B: Realignment of RT Tracks 22 Feet Westward, Installation of Crash Wall, and Minimum 42-Foot Track Separation.* This design option would entail the installation of the RT double tracks approximately 23 feet westwards from their original approved alignment, with both tracks on the west side of the SMUD power lines, and the installation of a railway industry-compliant crash wall between the UPRR mainline track and the RT tracks. This design option would also necessitate the relocation of an existing PG&E natural gas pipeline that lies beneath the proposed alignment.
 - *Design Option C: No Crash Wall, No UPRR ROW Acquisition, and 90-Foot Track Separation.* This design option would entail the installation of both of the RT tracks to the west of the UPRR ROW, at a distance of approximately 90 feet from the existing UPRR track center, and full acquisition of approximately 36 properties and residences to accommodate the RT alignment, with associated relocations.
2. Relocation of portions of the existing PG&E natural gas pipeline (applicable to Design Option B only) within an existing utility corridor;
3. Adjustments to the proposed Sacramento Regional Transit District right-of-way (RT ROW) to increase distance from the Morrison Creek levee, as required by the adopted City of Sacramento General Plan;

4. Relocation of TPSS #10 across Franklin Boulevard to provide for optimum power distribution along the Phase 2 extension; and
5. Extension of the tailtracks at the project's southern terminus to provide for LRT vehicle storage during non-commute hours.

S.3 ENVIRONMENTAL ANALYSIS

Topics Analyzed

The IS/EA evaluates a full range of impacts to the physical and social environments associated with implementation of the project alternatives. The implementation of Alternative 1 would result in the same impacts as already identified and assessed in the SFEIS/SFEIR. Accordingly, the same mitigation measures (if any) prescribed in the SFEIS/SFEIR for each topic would also be applicable to Alternative 1.

For Alternative 2, the analysis in the IS/EA considers only those specific portions of the Phase 2 project alignment that would be impacted by the proposed modifications. The findings of the analysis are summarized below in Table S-2. The following topics are analyzed in detail in the IS/EA:

- Aesthetics and Visual Resources
- Air Quality
- Biological Resources
- Climate Change
- Cultural Resources
- Land Use
- Noise and Vibration
- Population, Housing, and Socio-Economics
- Environmental Justice

A number of other NEPA and CEQA topics concern issues where the environmental setting, regulatory environment, and potential impacts from the implementation of Alternative 2 would be essentially identical to those that were reported in the SFEIS/SFEIR for Alternative 1. In all cases for these topics, the SFEIS/SFEIR found that the impacts resulting from implementation of Alternative 1 would not be adverse under NEPA, would be less than significant under CEQA, or would be mitigated to below a level of significance by implementation of mitigation recommended in the SFEIS/SFEIR (and subsequently adopted by RT and FTA) or by compliance with regulatory requirements. As such, these issues were not subject to further detailed evaluation in the IS/EA since such evaluation would be a duplication of the assessment in the SFEIS/SFEIR. These issues are summarized in Section 3.10 of the IS/EA:

- Agricultural Resources
- Electromagnetic Fields (EMF)
- Geology and Soils
- Hazardous Wastes
- Hydrology, Floodplains, and Water Quality
- Mineral and Energy Resources
- Public Services and Facilities
- Recreational Facilities
- Safety and Security
- Utilities
- Transportation
- Section 4(f)

Results of the Analysis

The results of the analysis contained in the IS/EA is summarized below in Table S-2.

Table S-2
Summary of Potentially Significant and Significant Impacts

Topic/Impact	Mitigation Measures	Impact Significance after Mitigation
Aesthetics and Visual Resources		
No adverse or significant effects with regards to: scenic vistas and scenic resources; degradation of existing visual character; light and glare.	No additional mitigation measures beyond those prescribed in the SFEIS/SFEIR.	CEQA: Less than Significant with Mitigation
Air Quality		
No adverse or significant effects with regards to: conflicts with applicable air quality management plans; air quality violations; cumulatively considerable increases in criteria air pollutants; exposure of sensitive receptors to pollutant concentrations; objectionable odors.	No additional mitigation measures beyond those prescribed in the SFEIS/SFEIR.	CEQA: Less than Significant with Mitigation
Biological Resources		
No adverse or significant effects with regards to: special status species or habitats; federally-protected wetlands; wildlife movement; local ordinances; adopted habitat conservation plans.	No additional mitigation measures beyond those prescribed in the SFEIS/SFEIR.	CEQA: Less than Significant with Mitigation
Climate Change		
No adverse or significant effects with regards to: the generation of greenhouse gas emissions; conflicts with applicable plans, policies, or regulations for the purpose of reducing emissions of greenhouse gases.	None.	CEQA: Less than Significant
Cultural Resources		
No adverse or significant effects with regards to: historic properties pursuant to Section 106 of the NHPA; historical, archaeological, or paleontological resources as defined in the State CEQA Guidelines; human remains and cemeteries.	No additional mitigation measures beyond those prescribed in the SFEIS/SFEIR.	CEQA: Less than Significant with Mitigation

Table S-2
Summary of Potentially Significant and Significant Impacts

Topic/Impact	Mitigation Measures	Impact Significance after Mitigation
Land Use		
No adverse or significant effects with regards to: land use incompatibility; conflicts with applicable land use plans or policies; physical division of an established community.	None.	CEQA: Less than Significant
Noise and Vibration		
No adverse or significant effects with regards to: Excessive noise exposure or substantial permanent noise increases; excessive groundborne vibration levels; substantial temporary noise level increases; exposure to excessive aircraft noise; increases in noise levels that would be considered a severe impact as defined by FTA criteria; exposure to ancillary equipment noise levels that exceed 45 dBA at nearest indoor sensitive noise receptors; increases in vibration levels that exceed FTA criteria.	<p>Mitigation as prescribed in the SFEIS/SFEIR and the following supplemental measures:</p> <p>N&V-7 Where appropriate, in lieu of the recommended sound walls, Sacramento Regional Transit shall install rail dampers and implement a maintenance program of rail grinding to lessen noise emissions from the LRT wheel/rail interface. Components of the program shall include, but not necessarily be limited to, the following:</p> <ol style="list-style-type: none"> 1. Wheel truing: Regular inspection of wheels and truing of wheels that are out of specifications to ensure that rough wheels do not lead to increased noise levels; 2. Rail grinding contract: A multi-year contract for rail grinding that includes annual grinding on an as-needed basis; 3. Grinding specification: All rail grinding shall comply with a specification that includes limits on surface roughness; 4. Verification measurements: Post-grinding measurements that verify that the rails meet the grinding specification. This step along with Step 3 shall be performed to provide RT with assurance that the grinding is performed correctly and to allow for competitive bidding; 5. Permanent monitoring and prioritization program: The permanent monitoring program shall be designed to determine when noise levels start to increase on a section of track and to prioritize the annual grinding. Once a baseline is established for each segment of track, track sections in need of grinding shall be prioritized in the grinding program; 6. Rail dampers: In addition to rail grinding, rail dampers may be utilized to achieve program objectives in noise-sensitive areas. <p>These in-lieu measures shall be designed to achieve the FTA Moderate Impact criteria. If attenuation below these levels cannot be confirmed, then Sacramento Regional Transit shall implement the sound wall mitigation as specified in the</p>	CEQA: Less than Significant with Mitigation

Table S-2
Summary of Potentially Significant and Significant Impacts

Topic/Impact	Mitigation Measures	Impact Significance after Mitigation
	<p>Phase 2 SFEIS/SFEIR as designed to achieve the FTA Moderate Impact criteria. Confirmation that this alternative mitigation program is effective will be based on a preliminary monitoring effort. For a period of not less than two years, noise measurements shall be taken on a biannual basis at appropriate locations along the alignment. If the FTA Moderate Impact criteria are exceeded during two successive monitoring cycles, or if the program is otherwise demonstrated to be less than effective in meeting these criteria, then the sound wall mitigation specified in the Phase 2 SFEIS/SFEIR shall be implemented.</p> <p>N&V-8 Prior to use of vibratory hammers, initial trenching shall be conducted to minimize vibration during the preliminary installation of sheet piling. Before initiating the pile driving, the contractor shall submit a vibration monitoring plan to the Resident Engineer and have the plan approved by the Resident Engineer. Monitoring shall occur on a continual basis during the use of vibratory hammer equipment whenever activities are occurring within 50 feet of the PG&E pipeline. If the monitoring determines that thresholds are likely to be exceeded, all vibration-producing operations must stop until it can be ensured that construction may commence without exceeding applicable safety standards. Monitoring results shall be recorded hourly in a log and be available at the work site for inspection by the Resident Engineer, project managers, construction supervisors, PG&E representatives, and other appropriate personnel.</p>	
Population, Housing, and Socio-Economics		
No adverse or significant effects with regards to: inducing substantial population growth; displacing substantial numbers of existing housing units; reductions in employment or employment opportunities; substantial reductions in local jurisdiction revenues.	No additional mitigation measures beyond those prescribed in the SFEIS/SFEIR.	CEQA: Less than Significant with Mitigation
Environmental Justice		
No adverse or significant effects with regards to disproportionate effects on environmental justice populations.	None.	CEQA: Less than Significant

This IS/EA will be available for public review. Following the public review period and the public meeting, RT will review the comments received on the IS/EA. If necessary, revisions to the IS/EA will be made and RT will determine whether the IS adequately satisfies the requirements of CEQA and whether any mitigation measures identified in the IS/EA should be adopted in the form of a Mitigated Negative Declaration. Assuming that the Board elects to approve the project, a Notice of Determination will be filed with the County Clerk and the State Clearinghouse to indicate the Board's decision.

FTA, as the lead federal agency under NEPA, will similarly consider the comments and responses, and determine whether significant or adverse environmental effects are likely to result from the project. If the FTA determines that no significant impacts are identified, then FTA would issue a Finding of No Significant Impact.

Section 1

Introduction/Purpose and Need

1.1 BACKGROUND

South Sacramento Corridor Light Rail Project Phase 2 Overview

The Sacramento Regional Transit District (RT) proposes to extend light rail transit (LRT) service approximately 4.3 miles south from the South Sacramento Corridor Light Rail Project Phase 1 terminus at Meadowview Road to Cosumnes River College (CRC). Phase 1 of the South Sacramento Corridor project was constructed between 2000 and 2003 and began operation in September 2003. The Phase 2 extension project is envisioned to travel south from the existing Meadowview Station along the Union Pacific Railroad (UPRR) right-of-way (ROW), turning east and crossing UPRR and Morrison Creek, continuing east to Cosumnes River Boulevard, crossing Franklin Boulevard and Center Parkway at-grade, crossing over Cosumnes River Boulevard and turning south along the western side of Bruceville Road, and terminating at CRC.

The Phase 2 project was evaluated by the Federal Transit Administration (FTA) and RT in a Supplemental Final Environmental Impact Statement/Subsequent Final Environmental Impact Report (SFEIS/SFEIR). The SFEIS/SFEIR evaluated three alternatives for the project and selected the Phase 2 extension alternative described above as the Preferred Alternative. The SFEIS/SFEIR was approved in December 2008 through the issuance of a Record of Decision by FTA and the filing of a Notice of Determination with the State of California by RT. In December 2009, the RT Board also adopted an addendum to the SFEIR for four proposed modifications to the Phase 2 project that were identified after certification of the SFEIS/SFEIR.

Purpose of this Environmental Document

Since approval of the SFEIS/SFEIR in 2008, a number of needed modifications to the project's design have been identified by RT. Because these modifications were not evaluated in the SFEIS/SFEIR, the proposed modifications require further environmental evaluation in compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The analysis and findings contained in the SFEIS/SFEIR, including all applicable mitigation measures, are incorporated by reference into this environmental document.

This environmental document is a joint Environmental Assessment (EA), prepared pursuant to NEPA, and an Initial Study (IS), prepared pursuant to CEQA. NEPA documentation is necessary whenever federal action or funding approval is sought. For this project, funding from the FTA is being sought and FTA is the federal lead agency (i.e., the federal agency responsible for approval and/or funding of the project). CEQA documentation is required whenever non-federal public agency approval of a discretionary project is sought. For this project, RT is the CEQA lead agency, since it would fund, approve, construct, and operate the proposed project.

The focus of this joint IS/EA is to determine whether the proposed project modifications being advanced by RT may have significant environmental consequences. If FTA determines that there are no significant environmental impacts as a result of the proposed project modifications, then a Finding of No Significant Impact (FONSI) would be issued. Similarly, if RT determines there are no significant environmental effects, it would approve a Negative Declaration. These findings would then enable RT to move forward with construction of the Phase 2 project. On the other hand, if it is determined that significant environmental consequences would result due to the proposed modifications, then an Environmental Impact Statement (EIS) (pursuant to NEPA) and an Environmental Impact Report (EIR) (pursuant to CEQA) that would include mitigation for the identified impacts, would be prepared, unless modifications could be made mitigating all impacts so they are no longer significant, in which case a Mitigated Negative Declaration could be prepared.

1.2 PURPOSE AND NEED FOR THE PROPOSED MODIFICATIONS

Purpose of and Need for the Overall Phase 2 Project

The SFEIS/SFEIR identified a project purpose and need, and a number of goals and objectives that would be met by implementation of the Phase 2 project. In summary, these goals and objectives related to issues surrounding future population growth in the South Sacramento Corridor, such as increased future travel demand and traffic congestion in the area, associated impacts to air quality from increased traffic, and the need for expanded access to transportation options for residents living and working in the area. For purposes of this IS/EA, these goals, objectives, and needs remain unchanged and are hereby incorporated by reference.

Purpose of and Need for Proposed Modifications to the Phase 2 Project

The proposed project modifications to the approved Phase 2 project, described in greater detail in Section 2 of this IS/EA, are necessary to allow for greater efficiencies in the construction and operation of the Phase 2 project and to address subsequently-adopted Union Pacific Railroad (UPRR) track separation standards and City of Sacramento General Plan policies. Figure 1-1 highlights the location of each of the proposed design modifications. The Purpose and Need for the proposed modifications is outlined below, and is summarized in Table 1-1.

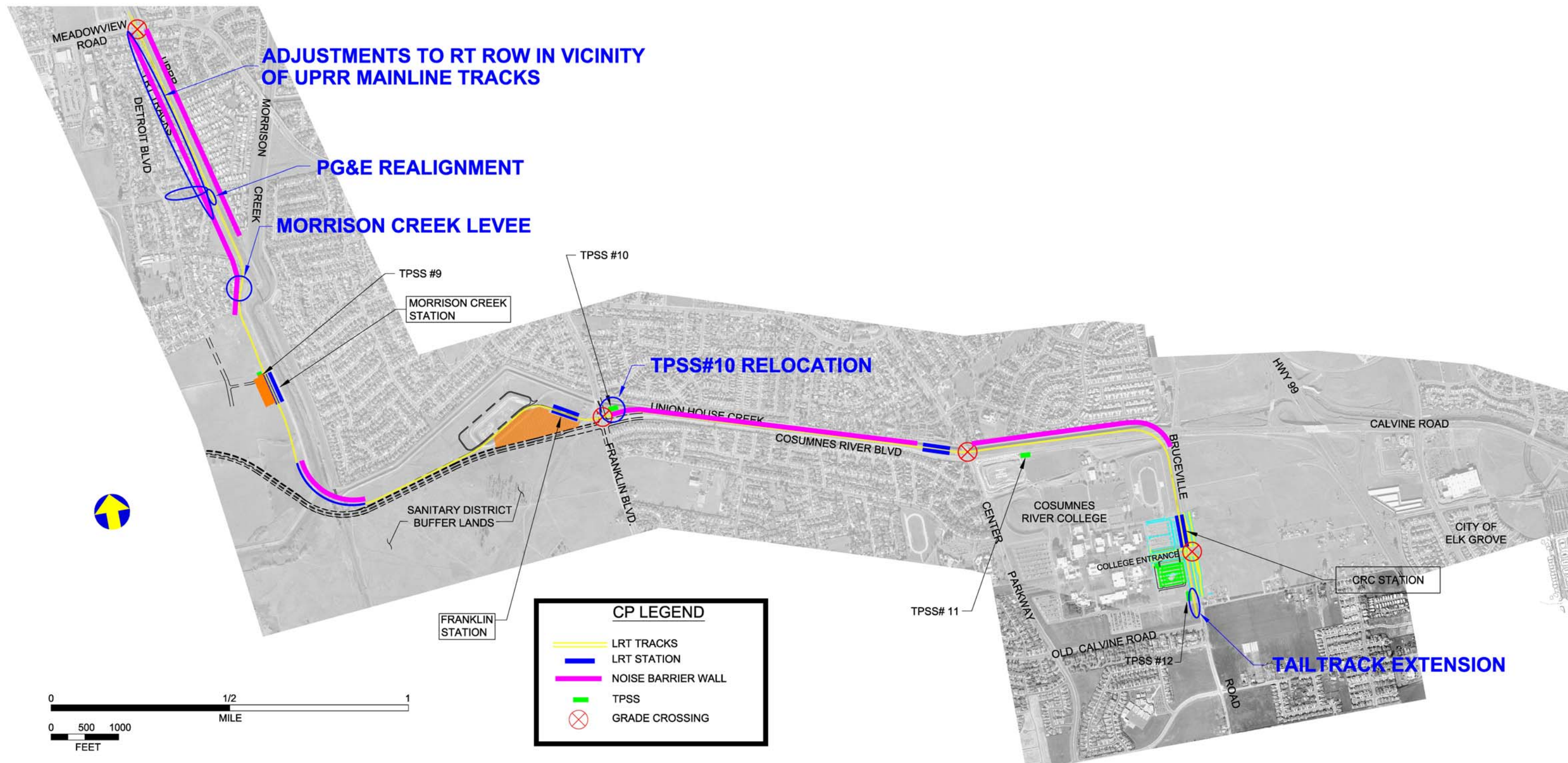


FIGURE 1-1
Project Overview Map and Location of Proposed Modifications

Source: Sacramento Regional Transit District, 2010.

<p style="text-align: center;">Table 1-1 Summary of Proposed Modifications to the South Sacramento Corridor Phase 2 Project</p>	
Proposed Design Modification	Reason for Modification
1) Realignment of approximately 4,700 feet of the northernmost portion of the Phase 2 extension.	Original design and ROW acquisitions contemplated track alignment at a 20-foot track center from the UPRR freight mainline. UPRR has now indicated that its minimum acceptable separation is 25 feet (with a crash wall between the two tracks), or a minimum of 50-foot centers if a crash wall is not installed. A total of three design options are under consideration for the track realignment. The proposed modification would comply with UPRR's requirement and avoid the need to relocate the PG&E natural gas pipeline out of the UPRR corridor, with the exception of Design Option B (see below).
2) Relocation of a 20-inch PG&E natural gas pipeline that would be disrupted by installation of the RT tracks (Design Option B only).	A total of three design options are under consideration for the realignment of the tracks adjacent to the UPRR freight mainline, discussed above. One of the design options (Option B) would require that an existing PG&E natural gas pipeline within the UPRR corridor be relocated. The original design assessed in the SFEIS/SFEIR called for the gas pipeline to be relocated in its entirety beneath Detroit Boulevard. If Design Option B is adopted, the proposed modification would allow for a shorter length of pipeline to be relocated. The shorter alignment would utilize a new pipeline alignment within Detroit Boulevard and an existing utility corridor previously identified in the SFEIS/SFEIR. Again, this pipeline relocation applies to Design Option B only. The other two design options would not require relocation of the pipeline.
3) Adjustments to proposed RT ROW to allow for greater separation from Morrison Creek levee.	The City of Sacramento adopted a General Plan Update in 2009 that requires infrastructure improvements to be located further from levees and other flood control structures. The proposed modification would comply with the City's policy.
4) Relocation of Traction Power Substation (TPSS) #10 from original proposed location in the Franklin Station parking lot to a new location across Franklin Boulevard.	Relocation of TPSS #10 would minimize voltage drop and provide optimum power distribution to the light rail system as recommended by RT's load flow analysis.
5) Addition of 400 feet of tailtrack at southern end of alignment.	Addition of tailtrack will allow for light rail vehicle storage, operational efficiencies, and reductions in vehicle miles traveled for non-revenue service.

Need for the Proposed Modifications

1. **LRT Tracks Adjacent to UPRR Mainline Tracks.** As described in further detail in Section 2 of this document, UPRR has modified its track separation requirements for other rail users operating adjacent to its rights-of-way. The original RT alignment assessed in the SFEIS/SFEIR utilized a track separation of 20 feet between the UPRR tracks and the RT tracks based on UPRR's then-existing separation requirements. The UPRR's revised separation requirements now call for a minimum of 50 feet of separation between the UPRR and RT tracks.
2. **PG&E Natural Gas Pipeline Relocation.** For one of the three design options under consideration for the LRT track realignment discussed above, an existing Pacific Gas & Electric (PG&E) natural gas pipeline lies directly beneath the proposed RT track alignment. If this design

option is adopted, the pipeline would need to be relocated so that it is not beneath the RT tracks and access by PG&E for maintenance and improvements remains available. If either of the other two design options is adopted, then the pipeline would not need to be relocated.

3. **Morrison Creek Levee Setback.** The original RT alignment assessed in the SFEIS/SFEIR was adjacent to the Morrison Creek levee. Since adoption of the SFEIS/SFEIR in 2008, the City of Sacramento has updated its General Plan to require a greater distance between flood control structures and other improvements. The increase in the distance required is the result of nationwide U.S. Army Corps of Engineers directives regarding flood control structural integrity and the City's concern that levees in the Sacramento area could be compromised by the placement of structures in direct proximity to levees and other flood control structures. In addition, structures that are placed too close to flood control levees could limit the ability of the City and other agencies to maintain and improve the levees in the future. As such, the original alignment assessed in the SFEIS/SFEIR is too close to the Morrison Creek levee and would not comply with the newly-adopted City standards.
4. **TPSS #10 Relocation.** The original proposal called for the placement of Traction Power Substation (TPSS) #10 in the proposed Franklin Station parking lot. Subsequent to the SFEIS/SFEIR, during the preliminary engineering phase of the project, a Traction Power Simulation and Load Flow Report¹ was prepared that determined that TPSS #10 should be relocated to minimize voltage drop and to provide optimum power distribution to the light rail system. Electric power to light rail vehicles is provided by substations that must be located certain distances from one another to maintain adequate electrical current flow. The report indicated that if the TPSS was located in its original position in the Franklin Station parking lot, a drop in voltage could occur that could cause stalling of LRT vehicles. In addition, if one of the adjacent TPSSs were to go offline as the result of a breakdown or maintenance requirements, the resulting voltage drop would be severe enough to render the LRT line inoperable for the duration of the outage.
5. **Tailtrack Extension at Cosumnes River College.** The original proposal for the southern terminus of the Phase 2 extension assessed in the SFEIS/SFEIR provided for limited storage of LRT vehicles at the proposed CRC station. During the preliminary engineering phase of the project, it was determined that the lack of vehicle storage at the CRC station would result in substantial operational inefficiencies on the South Line LRT route. Specifically, the lack of storage would require vehicles to travel to downtown Sacramento for storage at night and during non-commute hours. These vehicles would then need to travel back to the CRC station each morning and afternoon to be in the proper location to serve riders during commute periods. These transits to and from the downtown storage yard would be "dead-head" or non-revenue earning trips since the vehicles would be empty during the transits. As such, vehicle miles travelled would increase, and RT would incur increased maintenance costs due to additional wear-and-tear on the vehicles.

¹ LTK Engineering, 2009. Traction Power Simulation and Load Flow Report.

Purpose of the Proposed Modifications

The purpose of the proposed modifications to the Phase 2 project is to make the construction of the project more efficient, improve the operating environment for the extension, and respond to changed circumstances since the Phase 2 project approval. The modifications address the need for improvements to the alignment, track placement, and operating safety of the Phase 2 project. The proposed modifications are also intended to provide better service to RT riders by ensuring adequate power to the vehicles and efficient vehicle deployment.

1. **LRT Tracks Adjacent to UPRR Mainline Tracks.** The proposed modifications would enhance operational safety along this stretch of the alignment by increasing the distance of the RT tracks from the UPRR heavy rail freight tracks. The distance between the two tracks would provide an additional margin of safety in the unlikely event of a derailment by either operator. The modification would also allow RT to comply with UPRR's updated separation requirements and enable RT to successfully negotiate its right-of-way agreements with UPRR. Further, the increased separation would allow an existing PG&E natural gas pipeline within the UPRR corridor to remain in place (depending upon which design option is selected), rather than having to be relocated to Detroit Boulevard as was originally assessed in the SFEIS/SFEIR.
2. **PG&E Natural Gas Pipeline Relocation.** Three design options are presented in this IS/EA for the realignment of the RT tracks discussed above. One of those design options (Design Option B) would place the RT tracks directly above an existing PG&E natural gas pipeline. If this design option were to be adopted, then relocation of the pipeline to Detroit Boulevard would provide access to the pipeline for maintenance and future improvements. The original design for this pipeline called for it to be located in its entirety beneath Detroit Boulevard. The original plans also called for the installation of a spur pipeline within an existing utility corridor located approximately halfway along Detroit Boulevard, between Detroit Boulevard and the UPRR ROW. The original relocation required construction along the full length of Detroit Boulevard (approximately one mile) as well as construction within the existing utility corridor. The modified relocation of the pipeline presented in this IS/EA would lessen impacts to the local community by affecting approximately half of the length of Detroit Boulevard, rather than its entire length under the original plans. As such, the relocation of the pipeline would be accommodated with substantially less impacts to the community since only a portion of Detroit Boulevard would be disturbed rather than the entire length. Construction timelines, required trenching and excavation along Detroit Boulevard, and associated disruptions would be substantially lessened with the modified project. Cost savings would also be realized since the construction effort associated with the relocation would be approximately halved.
3. **Morrison Creek Levee Setback.** The proposed modifications would shift the proposed RT alignment slightly westwards to achieve a greater separation from the Morrison Creek levee. This greater distance would eliminate the potential for compromise of the existing levee structure and would also allow the City and other agencies greater access to maintain and improve the levee in the future. The surrounding area would thus achieve a greater degree of flood control protection than that realized under the original proposal.

4. **TPSS #10 Relocation.** The proposed relocation of TPSS #10 across Franklin Boulevard would provide for optimum power distribution along this section of the RT alignment. The relocation of TPSS #10 would allow trains to operate without stalling due to a voltage drop, and would allow an adjacent substation to be offline during emergencies or for maintenance without disruption to train service.
5. **Tailtrack Extension at Cosumnes River College.** The proposed 400-foot extension of the LRT tailtracks at the CRC station would allow LRT vehicles to be stored at the station during non-commute periods. This would allow the vehicles to be available to serve riders during commuting periods and minimize inefficient non-revenue-earning travel between the storage area and the start of service for peak periods. This tailtrack extension would lessen the overall costs associated with maintenance and operation of the LRT vehicles.

1.3 COORDINATION AND PUBLIC OUTREACH

See Section 5 of this IS/EA for a summary of the coordination and outreach efforts that have been undertaken during the preparation of this document. Section 5 also contains information on future steps to be taken with regards to environmental review for this project.

Section 2

Project Alternatives

2.1 INTRODUCTION

This section of the Initial Study/Environmental Assessment (IS/EA) defines and describes the alternatives examined in this environmental document. The Supplemental Final Environmental Impact Statement/Subsequent Final Environmental Impact Report (SFEIS/SFEIR) for the Phase 2 Extension project, adopted in December 2008, comprehensively analyzed three alternatives to the project, including the Preferred Alternative (the Phase 2 Extension project) that was eventually adopted.

This IS/EA assesses two alternatives: 1) the Phase 2 Extension Project Preferred Alternative as already assessed and approved; and 2) the Modified Phase 2 Preferred Alternative, which contains a number of modifications to the original Phase 2 Preferred Alternative. Since the original Phase 2 Preferred Alternative was already assessed in the SFEIS/SFEIR and approved by the Sacramento Regional Transit District Board (RT) and the Federal Transit Administration (FTA), it is the No Action/No Project Alternative. Implementation of this alternative would require no additional analysis or approvals.

Briefly, the two alternatives assessed in this document are:

Alternative 1 – No Project

This alternative would construct the Phase 2 Extension Project as already assessed in the 2008 SFEIS/SFEIR and approved by RT and FTA without the proposed modifications, and would consist of the following relevant components:

1. The proposed light rail transit (LRT) tracks would be constructed approximately 20 feet west of the Union Pacific Railroad (UPRR) mainline tracks, which would not comply with UPRR requirements for track separation;
2. The PG&E natural gas pipeline would be relocated from its current location adjacent to the UPRR tracks and would be installed beneath the entire length of Detroit Boulevard from Meadowview Road to the southern terminus of Detroit Boulevard, whereupon it would turn eastward and rejoin the existing PG&E pipeline adjacent to the UPRR tracks;
3. The LRT tracks would be constructed immediately adjacent to the Morrison Creek levee and would not comply with requirements of the adopted City of Sacramento General Plan;
4. Traction power substation (TPSS) #10 would be constructed in its originally planned location within the proposed Franklin Station parking lot and optimum power distribution would not be realized; and
5. The tailtracks at the project's southern terminus would not be extended 400 feet to the south and the provision of additional LRT vehicle storage during non-commute hours would not be accommodated.

Alternative 2 – Modifications to the Phase 2 Extension Project

This alternative would incorporate a number of specific modifications to the original Phase 2 Extension project that was approved in 2008:

1. Realignment of approximately 4,700 feet of the northernmost portion of the Phase 2 extension adjacent to the UPRR tracks, in accordance with UPRR requirements for track separation. Three potential design options are under consideration for this modification, as described further in this section;
2. The PG&E natural gas pipeline would either remain in its current location within the UPRR corridor or it would be relocated, depending upon which design option for the LRT track alignment is chosen. Under Design Options A and C, the pipeline would remain in place and would not require relocation. Under Design Option B, the pipeline would be relocated to Detroit Boulevard along half of the roadway's length, at which point it would turn eastward within an existing utility corridor and return to the existing pipeline easement;
3. Adjustments to the proposed Sacramento Regional Transit District right-of-way (RT ROW) to increase distance from the Morrison Creek levee, as required by the adopted City of Sacramento General Plan;
4. Relocation of TPSS #10 across Franklin Boulevard to provide for optimum power distribution along the Phase 2 extension; and
5. Extension of the tailtracks at the project's southern terminus to provide for LRT vehicle storage during non-commute hours.

Both of these alternatives are described in greater detail below in Section 2.2. Other potential alternatives that have been analyzed and rejected from further consideration in this IS/EA are summarized at the end of this section in Section 2.4.

2.2 ALTERNATIVE 1 – NO PROJECT

Both CEQA and NEPA require the consideration of a No Project, or No Action, Alternative. This alternative typically involves continuation of the status quo. The purpose of examining the No Project Alternative is to provide a baseline set of conditions against which the proposed project alternatives can be evaluated. This notion of having a benchmark against which alternatives can be evaluated is useful for the public and the decision-makers in determining the merits of investing in a particular project. In the case of this project, the No Project Alternative would be the construction of the Phase 2 Extension Project as already assessed in the SFEIS/SFEIR and subsequently approved by RT and the FTA, without any of the modifications described below in Section 2.3 for the Modified Phase 2 Alternative.

LRT Tracks Adjacent to UPRR Mainline Tracks

The No Project Alternative would retain the RT track alignment assessed in the SFEIS/SFEIR (see Figure 1-1 for the location of this component of the project). In the vicinity of the UPRR alignment, the RT and UPRR tracks would be located approximately 20 feet from one another. The track alignment would not

be shifted westward to provide the 50-foot separation now required by UPRR. No additional property acquisitions or temporary construction easements beyond those assessed in the SFEIS/SFEIR would be required. The project would be constructed as currently designed and approved.

PG&E Natural Gas Pipeline Relocation

The No Project Alternative would retain the original PG&E natural gas pipeline relocation assessed in the SFEIS/SFEIR (see Figure 2-6 for an aerial overview of the pipeline relocation). The project would be constructed as currently designed and approved. Per the approved plan, a 20-inch pipeline would be installed beneath the full length of Detroit Boulevard, beginning at Meadowview Road and extending south beneath the roadway for approximately one mile to the roadway's southern terminus. From this point, the pipeline would turn eastward and rejoin the existing PG&E pipeline adjacent to the UPRR tracks.

The approved design also provided for installation of a 10-inch natural gas pipeline within an existing utility corridor that runs perpendicular to Detroit Boulevard. This smaller pipeline route is depicted as the middle east-west green line in Figure 2-6. Since it was already assessed and approved in the SFEIS/SFEIR, this 10-inch pipeline extension would also be implemented as part of the No Project Alternative. A temporary construction easement would be required from adjacent property owners to install the 10-inch pipeline.

Morrison Creek Levee Setback

The No Project Alternative would maintain the current design for the RT track alignment in the vicinity of Morrison Creek levee (see Figure 1-1 for the location of this component of the project). The project would be constructed as currently designed and approved. No additional property acquisitions or temporary construction easements beyond those assessed in the SFEIS/SFEIR would be required.

TPPS #10 Relocation

The No Project Alternative would maintain the currently approved location for TPPS #10 in the future Franklin Station parking lot (see Figure 1-1 for the location of this component of the project). The project would be constructed as currently designed and approved. No additional property acquisitions or temporary construction easements beyond those assessed in the SFEIS/SFEIR would be required.

Tailtrack Extension at Cosumnes River College

The No Project Alternative would not provide for the extension of the project's tailtracks (see Figure 1-1 for the location of this component of the project). The project would be constructed as currently designed and approved. No additional property acquisitions or temporary construction easements beyond those assessed in the SFEIS/SFEIR would be required.

2.3 ALTERNATIVE 2 – MODIFICATIONS TO THE PHASE 2 EXTENSION PROJECT

Alternative 2 would implement a number of design modifications to the previously approved Phase 2 Extension Project. Figure 1-1 shows the location of each of these proposed modifications. The proposed modifications are described below.

Realignment of the LRT Tracks Adjacent to the UPRR Mainline Tracks

As part of the approved Phase 2 project, the LRT tracks in the northern portion of the extension would be located adjacent to an existing line of Sacramento Municipal Utility District (SMUD) 230kV transmission line poles within the RT ROW and the existing UPRR mainline tracks. These power poles are generally 30 feet west of the UPRR tracks (see Figure 2-1 for a photograph of the proposed corridor along this section). The location of the SMUD poles does not provide adequate space to allow placement of the RT double tracks between the poles and the existing UPRR tracks without shifting the UPRR tracks to the east. As a result, this arrangement requires that at least one of the RT tracks be placed west of the SMUD poles while the other RT track would be to the east of the SMUD poles.

Based on an August 2, 2005 communication from UPRR, the approved design of the Phase 2 extension in this section aligned the RT track centers 20 feet to the west of the UPRR freight mainline track (i.e., the distance between the centerline of the RT and UPRR tracks was 20 feet). This minimum separation from UPRR tracks allowed RT to construct its extension with one track on the east side of the SMUD poles and the other track on the west side as explained above (see Figure 2-2 for a cross section of this configuration). This design would not require relocation of the SMUD lines and encroachment into residential properties to the west would be limited. However, this alignment would require relocation of the existing PG&E natural gas pipeline within the corridor to Detroit Boulevard since the proposed LRT tracks would be located directly on top of the pipeline and would thus restrict access to the pipeline for maintenance activities. This alignment and the pipeline relocation were assessed in the SFEIS/SFEIR and adopted as the Preferred Alternative in September 2008.

In mid-2009, and after the approval of the SFEIS/SFEIR, UPRR informed RT that for safety reasons it would no longer accept a minimum distance of 20 feet between the RT and UPRR track centers. As part of its recently-adopted urban railway policy, UPRR now requires a minimum of 50 feet of separation between the centerlines of UPRR tracks and tracks operated by other operators unless the other operators construct a crash wall between the tracks. With a crash wall, UPRR would allow a minimum separation of 25 feet. According to UPRR, separations of at least 50 feet would not require the crash wall because the physical distance between the two tracks would serve as an adequate safety buffer in the event of a derailment.



FIGURE 2-1
View of Proposed Alignment West of the UPRR Tracks

Source: Project Team, 2010.

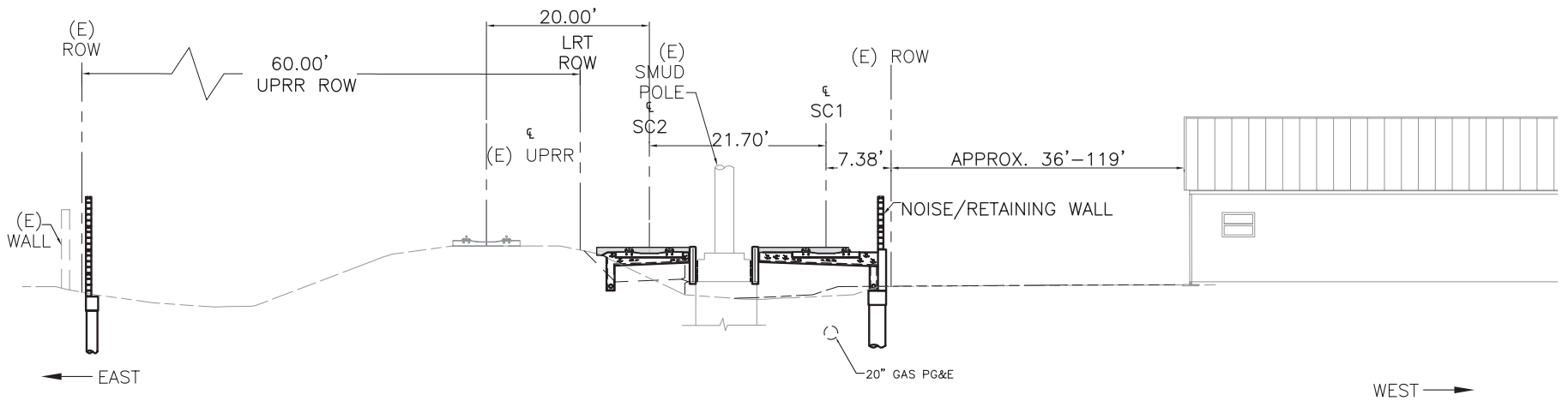
A number of design options were initially put forward by RT to address the new UPRR separation requirement. Four of these options were dropped from further consideration early in the process and were not subjected to detailed analysis. These rejected options are described and discussed in Section 2.4 of this IS/EA. Three remaining options were assessed further and are presented in this IS/EA. See Figure 2-2 for cross sections of the three design options.

Design Option A: Realignment of RT Tracks 33 Feet Westward, Minimum 53-Foot Track Separation

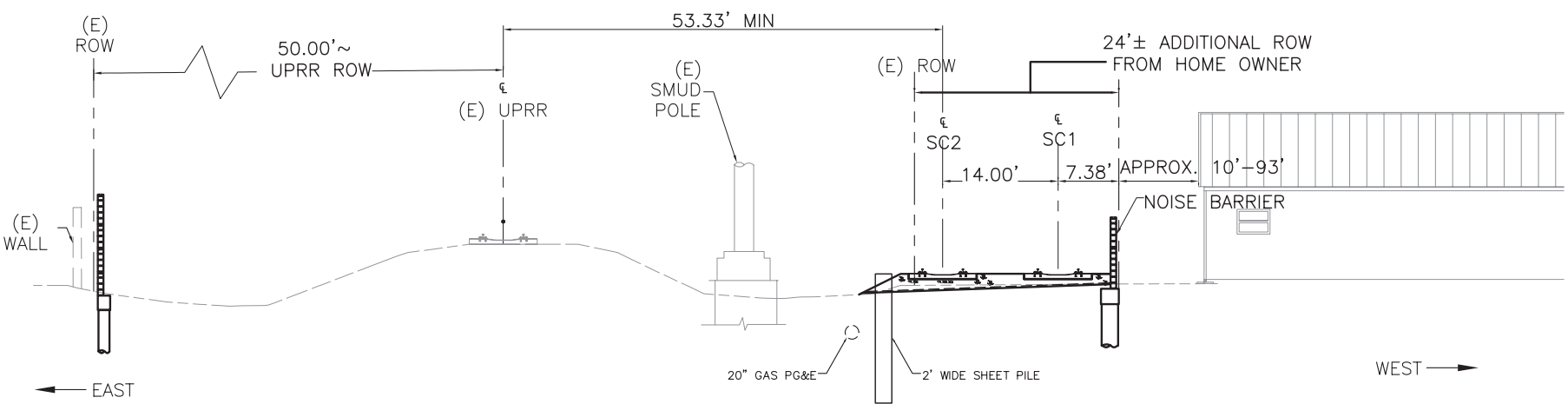
This design option would shift both of the RT tracks to the west to comply with UPRR's separation requirement. The proposed realignment would locate the RT tracks approximately 33 feet west of the SMUD line (See Figure 2-3 for a broad aerial overview of the alignment, and also Appendix A, Exhibits A-1 through A-8 for detailed views of the alignment). This realignment would require the acquisition of additional ROW to the west of the original alignment. Whereas the original alignment assessed in the SFEIS/SFEIR identified the need for temporary construction easements across the properties to the west, this new design option would require fee simple acquisitions of portions of these properties, as well as temporary construction easements across the remaining properties.

The option would also require the installation of an underground sheet pile, a concrete slurry wall, or a similar barrier between the LRT tracks and the existing PG&E natural gas pipeline that is located within the UPRR corridor. The barrier would provide enhanced protection for the pipeline during LRT construction and maintenance activities against accidental damage or rupture. Such precautions are desirable given the heightened concern over pipeline vulnerability and public safety. Furthermore, the barrier would allow PG&E to conduct maintenance on its pipeline without affecting LRT operations. The barrier would be installed approximately 10 feet into the ground along the LRT alignment within the UPRR corridor (see Figure 2-2, Design Option A, for the location of the barrier). The barrier would meet design criteria established by state and federal standards. These standards would include, but would not be limited to, the following: 1) Limitations on vibration during installation of the barrier to reduce the possibility of damage to the pipeline; 2) cathodic protection of both the pipeline and the barrier to prevent corrosion; 3) provisions for appropriate response in the event of an emergency or other event; and 4) other analysis or data as determined during design and engineering.

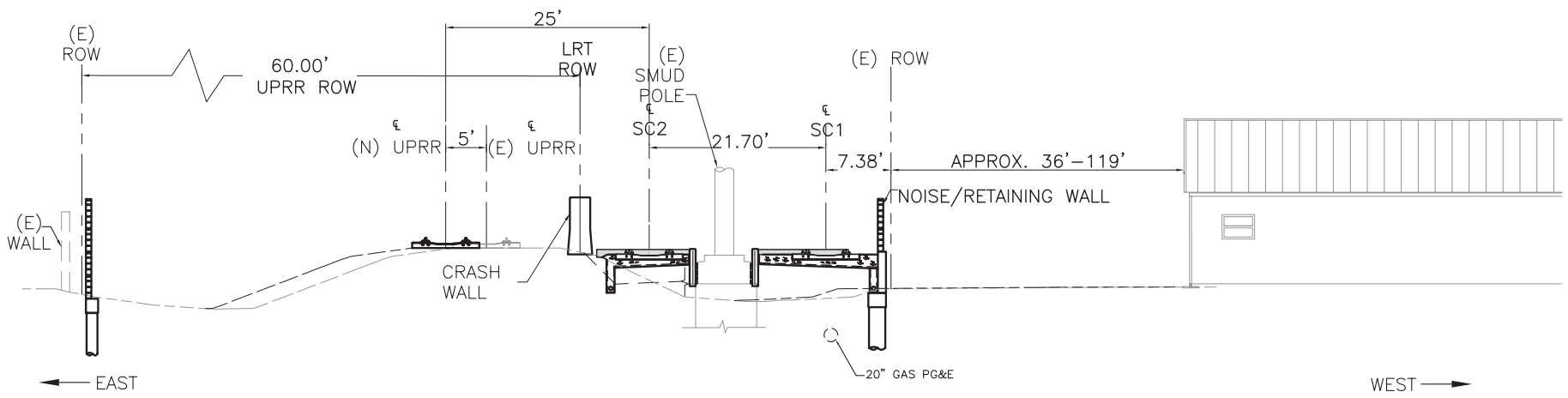
Under Design Option A, the installation of the LRT tracks along this portion of the alignment would also include the installation of a crossover switch to allow the transfer of LRT vehicles between tracks when needed for maintenance or other activities. The crossover switch would be located in the vicinity of a large, triangular-shaped vacant parcel, currently owned by UPRR but to be acquired by RT as part of the Phase 2 project. The approximate location of the crossover switch is depicted in Figure 2-3. The switch would be located a sufficient distance from sensitive receptors so as to avoid undesirable vibration effects from the switch's operation. Vibration modeling conducted for the proposed switches indicated that if spring switching frogs were utilized, the switch would need to be placed a minimum of 40 feet from the nearest sensitive receptor to eliminate potential vibration impacts to adjacent residences. If non-spring standard switches were utilized, a minimum separation distance of 110 feet would be required.



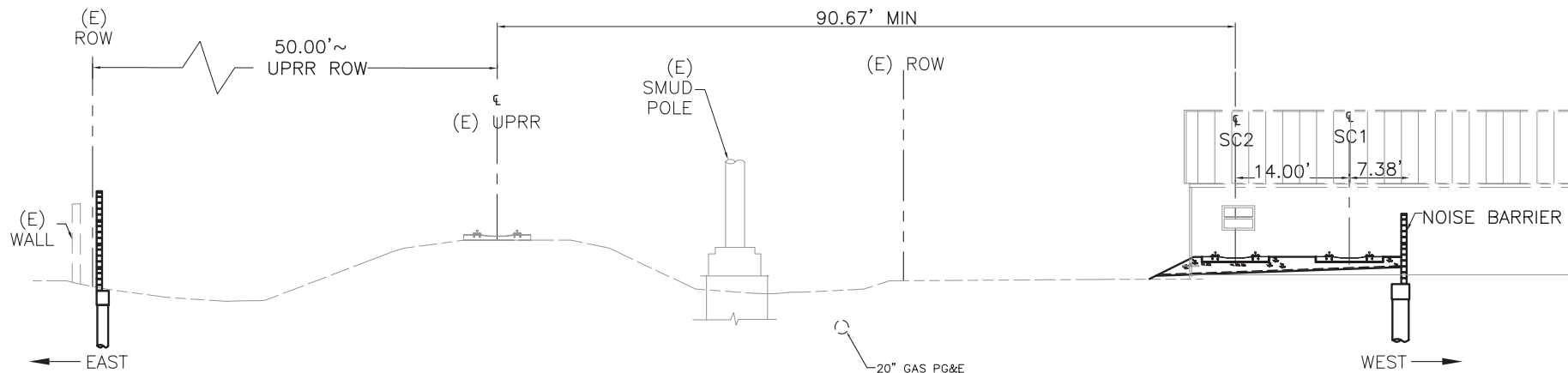
ORIGINAL PROPOSED CROSS SECTION



OPTION A



OPTION B



OPTION C

FIGURE 2-2
Cross Sections of Original Alignment and Modified Design Options A, B, and C

Source: Sacramento Regional Transit District, 2011



FIGURE 2-3
Aerial Plan View of Modified Design Option A

100018039

Source: Sacramento Regional Transit District, 2011.

Sacramento Regional Transit District
 South Line Corridor Phase 2 Extension Project IS/EA

Advantages of this design option include:

1. Meets UPRR requirements for track separation;
2. Avoids impacts to the UPRR ROW and allows UPRR to maintain its existing track location;
3. Avoids the need to relocate the existing PG&E natural gas pipeline beneath the UPRR corridor to Detroit Boulevard since the new track alignment would not be located above the pipeline and would therefore provide sufficient access to the pipeline for maintenance activities. Installation of a sheet piling barrier between the LRT tracks and the pipeline would be required to provide enhanced protection for the pipeline during construction and maintenance activities;
4. Requires less imported earthen fill than the approved project;
5. Allows continued access to the SMUD lines for maintenance and repair;
6. Lessens the required height of the sound wall on the east side of the UPRR alignment from 12 feet to approximately 8 feet, or can even eliminate the need for soundwalls on the east side altogether if additional noise mitigation is incorporated (see Section 3.7, Noise and Vibration);
7. The installation of the crossover switch will facilitate the movement of LRT vehicles from one track to another for purposes of maintenance or other activities;
8. Results in cost savings of \$5-8 million below the approved design estimates due to the elimination of improvements previously required (e.g., only one set of catenary poles is required for this option versus the two under the approved design; a maintenance road for SMUD pole access would no longer be needed; the PG&E pipeline would not need to be relocated; and requirements for retaining and sound walls would be reduced).

Disadvantages of this option include the requirement for the project to encroach into the backyards of residences to the west of the alignment by an average of approximately 24 feet. Under this design option, the distance between the new RT ROW and the residential structures would vary between 10 feet and 77 feet, with the majority of properties retaining more than 20 feet of backyard space. However, no full residential property takes or relocations would be required unless an appraisal were to determine that the partial acquisition would so affect the value of the properties that their future value would be substantially diminished. A total of 31 partial acquisitions would be required. Table 2-1 lists the affected parcels and the percentage of parcel acquisition required for this option. See Appendix A, Exhibits A-1 through A-8 for detailed aerial views of how the alignment for Design Option A would affect these properties.

Table 2-1
Property Needed for Realignment of RT Tracks Adjacent to UPRR ROW

Assessor's Parcel Number	Total Size of Parcel (sq ft)	Percentage of Parcel to be Acquired		
		Option A	Option B	Option C
053-0053-007	10,890	11%	6%	100%
053-0053-008	10,019	21%	12%	100%
053-0053-009	7,405	19%	11%	100%
053-0053-010	7,405	19%	11%	100%
053-0053-011	9,148	19%	11%	100%
053-0053-012	14,810	28%	16%	100%
053-0053-024	16,988	10%	6%	100%
053-0053-026	11,326	13%	8%	100%
053-0053-026	10,890	15%	9%	100%
053-0053-027	10,454	15%	9%	100%
053-0053-028	10,019	16%	9%	100%
053-0064-001	9,583	16%	9%	100%
053-0064-002	10,019	16%	9%	100%
053-0064-003	10,019	16%	9%	100%
053-0064-004	10,019	16%	9%	100%
053-0064-005	10,454	15%	9%	100%
053-0064-006	11,326	14%	8%	100%
053-0064-007	12,197	13%	8%	100%
053-0064-008	10,890	14%	8%	100%
053-0064-010	13,068	14%	8%	100%
053-0064-011	13,504	27%	16%	100%
053-0064-012	12,632	7%	4%	100%
053-0074-003	13,504	11%	6%	100%
053-0074-004	10,890	31%	18%	100%
053-0074-005	17,860	18%	10%	100%
053-0104-005	6,098	44%	24%	100%
053-0104-006	7,841	18%	10%	100%
053-0104-007	12,197	12%	7%	100%
053-0104-008	7,405	19%	11%	100%
053-0104-009	7,841	31%	18%	100%
053-0101-042	23,750	12%	7%	100%
053-0104-004	6,098	None	None	100%
053-0104-012	7,841	None	None	100%
053-0141-011	9,148	None	None	100%
053-0141-012	10,019	None	None	100%
053-0141-013	7,841	None	None	100%

Source: Sacramento Regional Transit District, December 2010.

Design Option B: Realignment of RT Tracks 22 Feet Westward, Installation of Crash Wall, and Minimum 42-Foot Track Separation

This design option would entail the following principal components: 1) installation of the RT double tracks approximately 23 feet westwards from their original approved alignment, with both tracks on the west side of the SMUD power pole; and 2) installation of a railway industry-compliant crash wall between the UPRR mainline track and the RT tracks. See Figure 2-4 for a broad aerial overview of the alignment, and also Appendix A, Exhibits B-1 through B-8 for detailed aerial views of the alignment.

Advantages of this option include:

1. UPRR requirements for track separation would be met (with installation of the crash wall);
2. UPRR would remain within its preferred alignment; and
3. Encroachments into the backyards of residences to the west of the alignment would be approximately 13 feet, or about 11 feet less than that required under Design Option A. A total of 31 partial acquisitions would still be required. Table 2-1 lists the affected parcels and the percentage of parcel acquisition required for this option. See Appendix A, Exhibits B-1 through B-8 for detailed aerial views of how the alignment for Design Option B would affect these properties.

Disadvantages of this option include:

1. While this option reduces the acquisition needed from 24 feet to 13 feet, this benefit would only be realized with substantial cost increases to the project (i.e., installation of the crash wall would cost about \$10 million);
2. Since the LRT tracks would be located directly above the existing PG&E natural gas pipeline beneath the UPRR corridor, the pipeline would still need to be relocated to Detroit Boulevard, with associated costs and temporary construction-related impacts; and
3. Substantial increases to the project budget would also reduce “unallocated contingency funds” to levels unacceptable in the FTA New Starts funding process. Subsequent impacts to the project budget and schedule would make project implementation extremely difficult.

Design Option C: No Crash Wall, No UPRR ROW Acquisition, and 90-Foot Track Separation

This design option would entail two principal components: 1) installation of both of the RT tracks to the west of the UPRR ROW, at a distance approximately 90 feet from the existing UPRR track center; and 2) full acquisition of 36 properties and residences to accommodate the RT alignment, with associated relocations (see Figure 2-5 for a broad aerial overview of the alignment, and also Appendix A for detailed views of the alignment).

Advantages of this option include:

1. UPRR requirements for track separation would be met;
2. Impacts to the UPRR ROW would be minimized (minor acquisition at the north end of the project for the transition of the light rail track and purchase of a southerly remnant parcel would likely be required), and UPRR would continue to maintain its preferred track location;
3. This option would require less importation of earthen fill than the approved RT alignment proposal;
4. The PG&E gas line would not need to be relocated to Detroit Boulevard, with an associated decrease in temporary construction-related impacts and a substantial cost savings; and
5. Since the RT tracks would be shifted substantially to the west, this option would likely eliminate the need for a sound wall on the east side of the UPRR alignment and result in associated cost savings.

Disadvantages of this option include:

1. This option would require substantial project redesign of the alignment through this section, as well as to track transition areas to the north and south;
2. The proposed RT track alignment would require the acquisition and full take of approximately 36 residential properties to the west of the alignment, with associated displacements and relocations. Table 2-1 lists the affected parcels and the percentage of parcel acquisition required for this option. See Appendix A, Exhibits C-1 through C-8 for detailed aerial views of how the alignment for Design Option C would affect these properties.
3. This option could possibly create disruptions to community cohesion since the combined UPRR and RT ROW corridors would now be nearly double the width of that under Design Option A; and
4. The full takes of 36 private residential properties would remove those properties from the property tax revenue base, with resultant negative implications for local tax revenues.

As shown in Table 2-1, each of the design options would require a number of partial or full acquisitions of property adjacent to the UPRR alignment. Federal and State laws govern the taking of private property, and include requirements for just compensation, relocation assistance, and other assistance measures. Accordingly, the acquisition of property and the relocation of any property owners associated with the proposed project would occur in accordance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and Amendments (Public Law 91-646) and the California Relocation Act (California Government Code, Chapter 16, Section 7260 *et. seq.*) and related laws and regulations. The acquisition process that would be implemented for this project is explained in detail in Section 3.8 of this IS/EA, Population, Housing, and Socio-Economics.



FIGURE 2-4
Aerial Plan View of Modified Design Option B

100018039

Source: Sacramento Regional Transit District, 2011.

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FIGURE 2-5
Aerial Plan View of Modified Design Option C

100018039

Source: Sacramento Regional Transit District, 2011.

Sacramento Regional Transit District
 South Line Corridor Phase 2 Extension Project IS/EA

PG&E Natural Gas Pipeline Relocation (Applicable to Design Option B Only)

The requirement for the PG&E natural gas pipeline relocation and the LRT track realignment are interrelated, since the need for the pipeline's relocation is dependent upon which design option is chosen for the LRT track alignment (see the preceding discussion on the LRT track realignment). As discussed above, Design Option C would not require relocation of the pipeline, since this alignment would place the LRT tracks a sufficient distance from the pipeline so that the tracks would not interfere with access to the pipeline for maintenance purposes. For Design Option A, the installation of sheet piling between the LRT tracks and the pipeline would provide enhanced protection for the pipeline, allowing the pipeline to remain in place. Design Option B, however, would require relocation of the pipeline since the LRT tracks would be located directly above the pipeline and would thus restrict access for maintenance. Therefore, the pipeline relocation only applies to Design Option B.

The relocation of this pipeline to accommodate the original proposed alignment for the Phase 2 project (see Figure 2-2) was assessed in the SFEIS/SFEIR. Figure 2-6 shows the 20-inch PG&E pipeline relocation that was evaluated. PG&E has since requested that if this option is adopted, that the relocated line be constructed with a 24-inch diameter pipe with the cost of the betterment borne by PG&E. The previously approved design relocated this pipeline along the entire length of Detroit Boulevard (approximately one mile) before tying back into the existing pipeline. The design also called for a connection of a 10-inch pipeline approximately midway along the pipeline realignment within an existing east-west utility corridor.

During subsequent review of this pipeline relocation by RT and PG&E, an alternative route was identified which would disturb only one half the length of Detroit Boulevard, by using the previously identified utility corridor and upsizing the originally planned 10-inch connection to a 16-inch connection. Figure 2-6 shows the location of this change. This alternative route would reduce construction-related impacts to the community and project costs by eliminating approximately half of the earlier approved gas pipeline realignment along Detroit Boulevard, and has been endorsed by PG&E as consistent with their long range plans for the eventual relocation of the line to Detroit Boulevard. Detroit Boulevard would remain open for traffic during the relocation process. The parcels affected by the revised gas line realignment are located along the middle east-west green line shown in Figure 2-6.

This utility corridor through which the 16-inch pipeline would pass was created when the residential subdivision was built in the early 1970s. These parcels are already encumbered by various utility easements, including existing PG&E utility poles. Their use for the project would not require any residential displacements or relocations. The change from the design assessed in the SFEIS/SFEIR is that the pipeline within this corridor would now be 16 inches rather than 10 inches in diameter. The SFEIS/SFEIR identified the need for easements across the affected properties to install the 10-inch pipeline. With the upgrade to a 16-inch pipeline, PG&E would now require uninterrupted access to their pipeline corridor, and the affected parcels would now be fee simple property acquisitions rather than easements. None of the acquisitions would involve residential displacement.

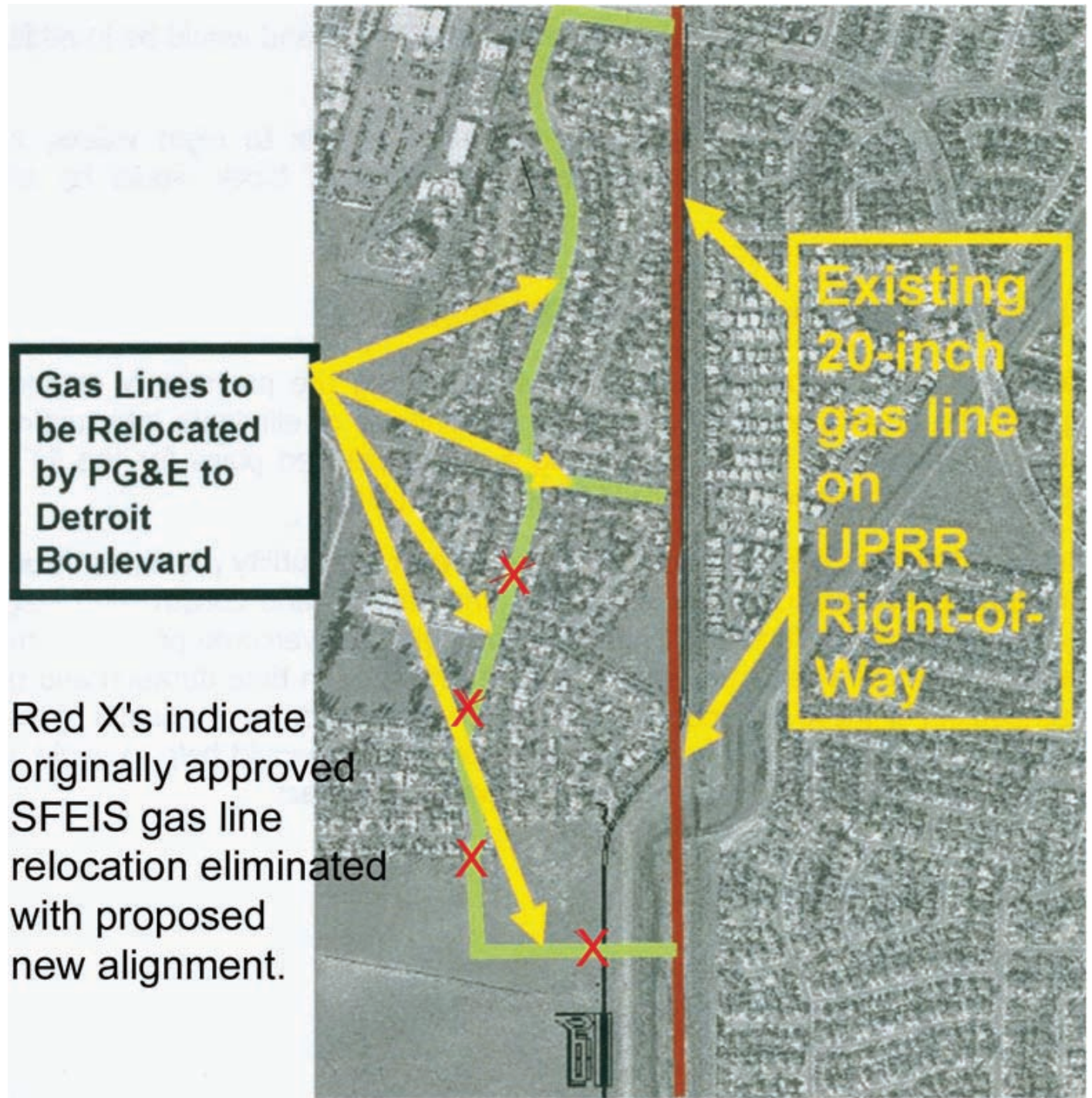


FIGURE 2-6
Gas Line Relocation Aerial View (Applicable to Design Option B Only)

Source: South Sacramento Corridor Phase 2 Project SFEIS/SFEIR, 2008.

Sacramento Regional Transit District

South Line Corridor Phase 2 Extension Project IS/EA

The utility corridor was identified as “Lot C” on the subdivision tract map (see Figure 2-7), and was divided into numerous smaller parcels, some of which were later sold and merged with adjoining parcels. A list of the properties to be acquired is provided below in Table 2-2. The partial acquisitions for three parcels are former utility corridor parcels that were subsequently merged with their adjoining parcels (see Figure 2-8). The partial acquisitions for four other parcels are portions of single family residential lots. Portions of the backyards of these lots would be needed for the pipeline relocation (see Figure 2-9). The seven full acquisition properties are vacant, stand-alone remnant parcels from the division of Lot C that were not subsequently merged into their adjoining parcels. The project would acquire these remnant parcels in full. Since all of the property acquisitions would be comprised entirely of vacant parcels or portions of backyards, no residential relocations or displacements would be required as part of the realignment of the pipeline.

Figure 2-10 presents photographs of the Lot C remnant parcels that would be acquired as part of the pipeline relocation. The pipeline relocation would require the removal of any existing fences and the construction by RT of new fences delineating the new PG&E ROW. PG&E would require unimpeded access to the pipeline ROW, as defined by the new fences.

On December 14, 2009, the RT Board adopted an Addendum to the SFEIR that assessed the PG&E gas pipeline relocation modification for purposes of CEQA. As such, the analysis contained in this IS/EA is being undertaken for purposes of FTA oversight and NEPA compliance only.

Table 2-2
Property Needed for PG&E Gas Pipeline Relocation (Applicable to Design Option B Only)

Assessor's Parcel Number	Total Size of Parcel (sq ft)	Amount of Take (sq ft)	Percentage of Parcel to be Acquired^a
053-0104-040	12,440	3,050	25%
053-0101-041	18,950	5,772	30%
053-0093-026	8,984	2,337	26%
053-0093-008	10,454	1,177	11%
053-0093-009	11,761	4,014	34%
053-0093-010	8,276	2,590	31%
053-0093-011	9,583	889	9%
053-0104-037	5,619	5,619	100%
053-0104-035	3,049	3,049	100%
053-0104-031	941	941	100%
053-0104-032	3,075	3,075	100%
053-0104-028	649	649	100%
053-0104-027	183	183	100%
053-0104-026	6,534	6,534	100%

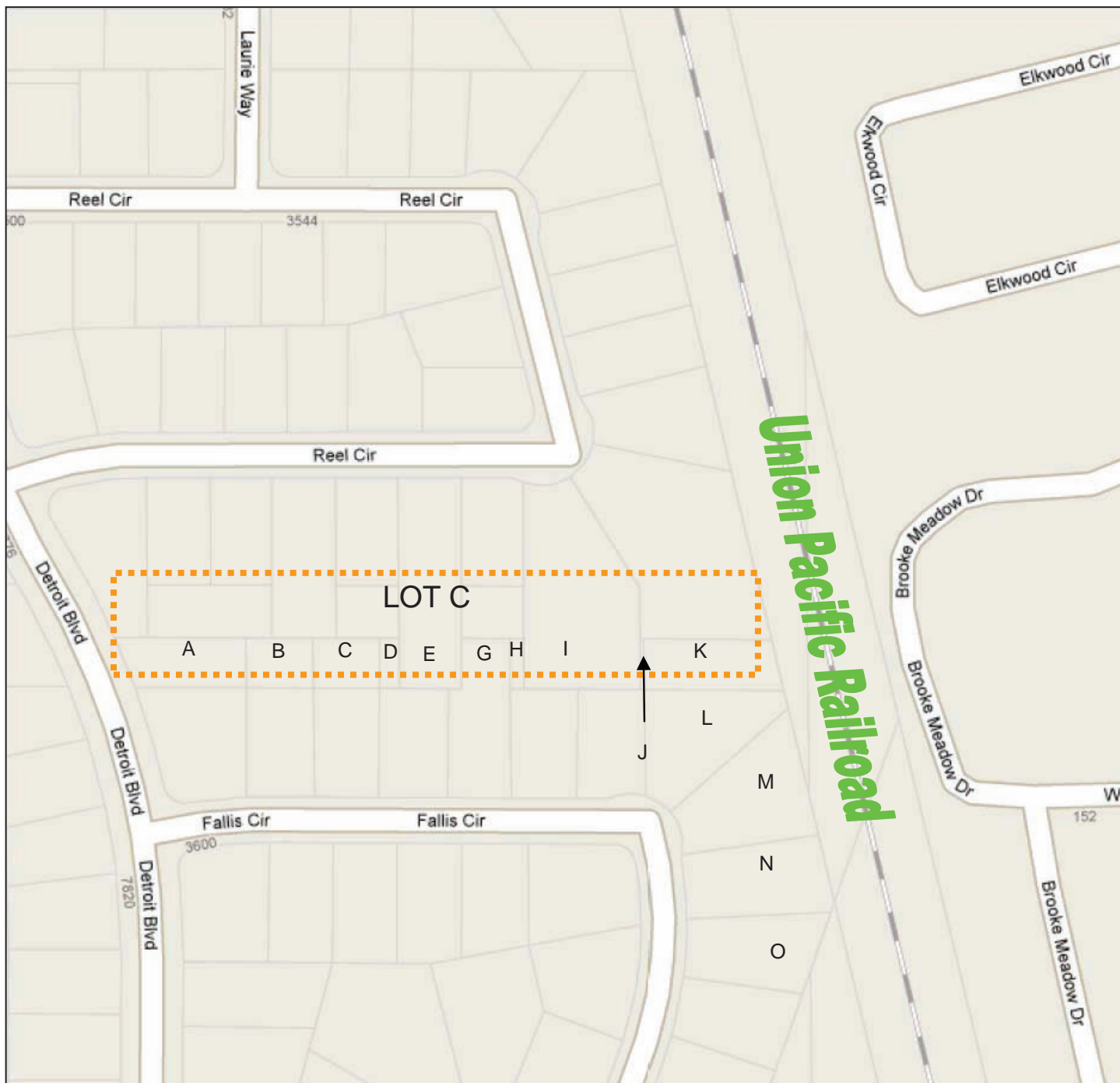
Source: Sacramento Regional Transit District, December 2010.

Note:

- a. Note that seven parcels would need to be acquired in full (i.e., 100 percent). However, each of these parcels consist of remnant backyard parcels that were left over from the area's original subdivision. None of these parcels contain residences or other habitable structures.



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A = Davis	I = Chavez
B = Cha	J = State of California
C = Hill	K = Meza
D = Hill	L = Meza
E = Yang	M = Pereira
G = Lutz	N = Singh
H = Hang	O = Lor



FIGURE 2-8
Parcel Map of Lot C and Owner Identification (Applicable to Design Option B Only)

Source: Sacramento Regional Transit District, 2010.

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Sacramento Regional Transit District
 South Line Corridor Phase 2 Extension Project IS/EA

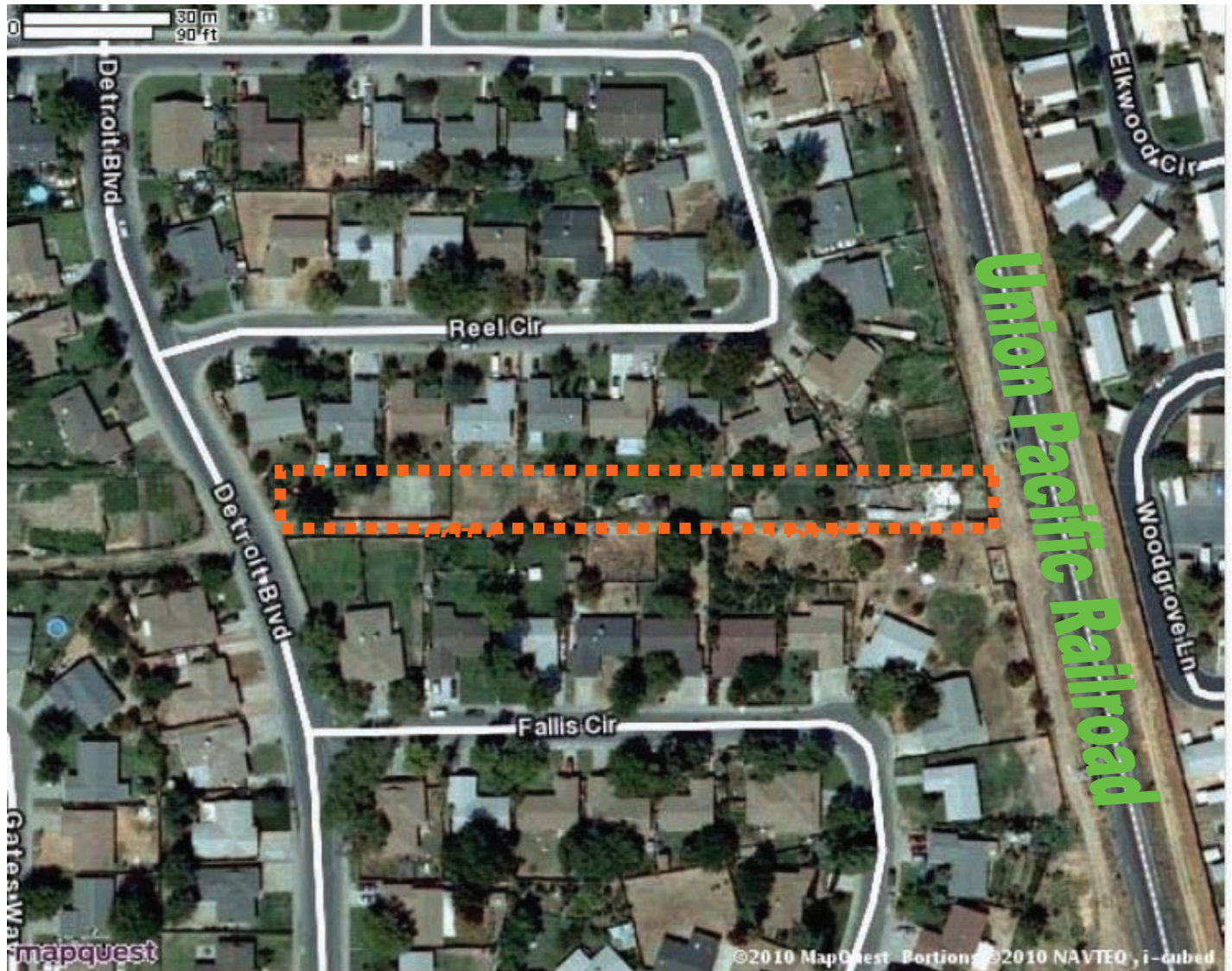


FIGURE 2-9
Aerial View of Lot C (Applicable to Design Option B Only)

Source: Sacramento Regional Transit District, 2010.

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Sacramento Regional Transit District
 South Line Corridor Phase 2 Extension Project IS/EA



Photo taken looking east down the utility corridor.



Hill property (C and D)



Hang property (H)



Meza property (K and L)



Lor property (O)



Davis property (A)



Yang property (E)



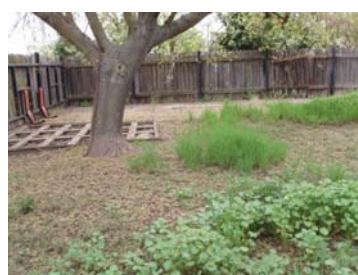
Chavez property (I)



Pereira property (M)



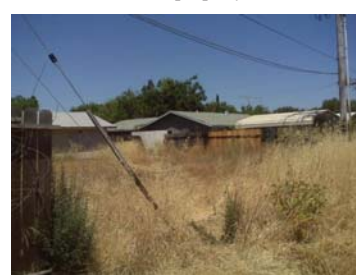
Cha property (B)



Lutz property (G)



State of California property (J)



Singh property (N)

FIGURE 2-10
Property Photos for Lot C Remnant Parcels (Applicable to Design Option B Only)

Source: Sacramento Regional Transit District, 2010.

Morrison Creek Levee Setback

After approval of the SFEIS/SFEIR, the City of Sacramento adopted a General Plan Update in March 2009; the update increased the required setbacks of new development from earthen flood control levees. The new setbacks would require adjustment of the RT tracks further west away from the Morrison Creek levee. The partial acquisition of portions of two parcels would be needed for this adjustment. There would be no residential displacement or relocations associated with acquisition of these parcels. The plat maps and recent photos of these parcels are included as Figure 2-11 through Figure 2-14. Table 2-3 lists the affected parcels.

Table 2-3
Property Needed for Adjustment of RT Alignment Adjacent to Morrison Creek Levee

Assessor's Parcel Number	Total Size of Parcel (sq ft)	Amount of Take (sq ft)	Percentage of Parcel to be Acquired
053-0141-016	8,712	126	1%
053-0141-020	6,970	98	1%

Source: Sacramento Regional Transit District, December 2010.

It should be noted that on December 14, 2009, the RT Board adopted an Addendum to the SFEIR that assessed the Morrison Creek Levee setback modification for purposes of CEQA. As such, the analysis contained in this IS/EA is being undertaken for purposes of FTA oversight and NEPA compliance only.

TPSS #10 Relocation

Traction power substations (TPSS) are spaced at calculated distances to allow for power redundancy. TPSS #10 was originally planned to be located within the future Franklin Station park-and-ride lot. During the Preliminary Engineering phase of the project, the Traction Power Simulation and Load Flow Report determined that TPSS #10 should be relocated to minimize voltage drop and provide optimum power distribution to the light rail system. The optimum location was identified as the IJAZ property, which is located across Franklin Boulevard from the future Franklin Station. Locating TPSS #10 at the IJAZ property would allow trains to operate without stalling due to a voltage drop, and would allow an adjacent substation to be offline during emergencies or for maintenance without disruption to train service. As such, TPSS #10 is proposed for relocation across Franklin Boulevard to the IJAZ property, as part of the Phase 2 Extension Project modifications.

The IJAZ property, previously identified as a partial take in the SFEIS/SFEIR (required to construct light rail tracks and an instrument house to control the grade crossing equipment for Franklin Boulevard), would now need to be fully acquired (1.48 acres total) for placement of TPSS #10. This parcel is bounded on three sides by Cosumnes River Boulevard, Franklin Boulevard, and Union House Creek; is currently vacant and undeveloped; and would not involve a displacement or relocation. Table 2-4 describes the affected parcel.

EXHIBIT 'B'
SOUTHGATE UNIT NO 3
BOOK 84 OF MAPS, AT PAGE 20, ORSC
A PORTION OF SECTION 8, T.7 N., R.5 E., MDM
CITY OF SACRAMENTO, SACRAMENTO COUNTY, CALIFORNIA
SCALE: 1"=30' MAY 22, 2009

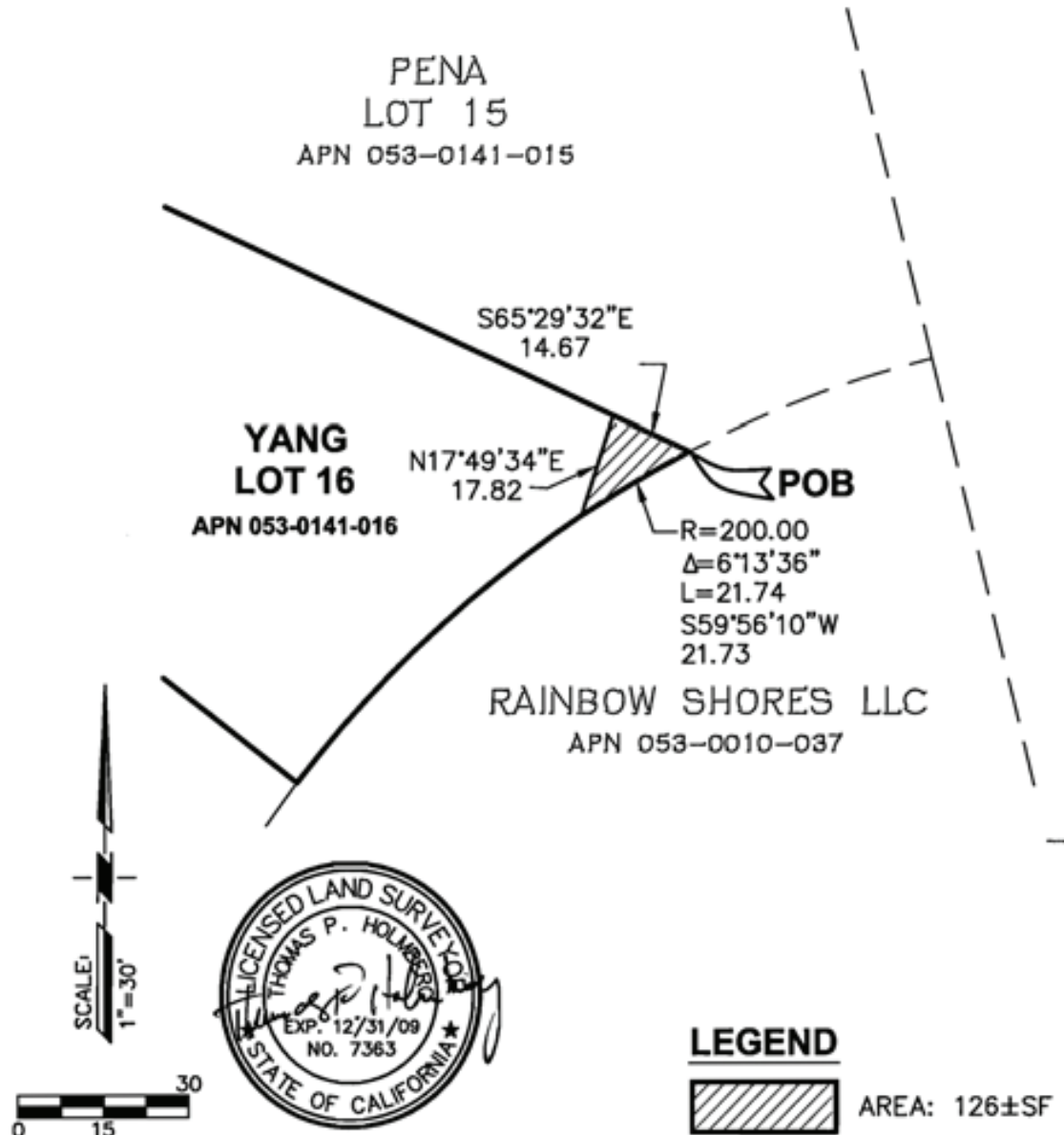


FIGURE 2-11
Plat Map of Xiong/Yang Partial Acquisition

Source: Sacramento County Assessor, 2010.

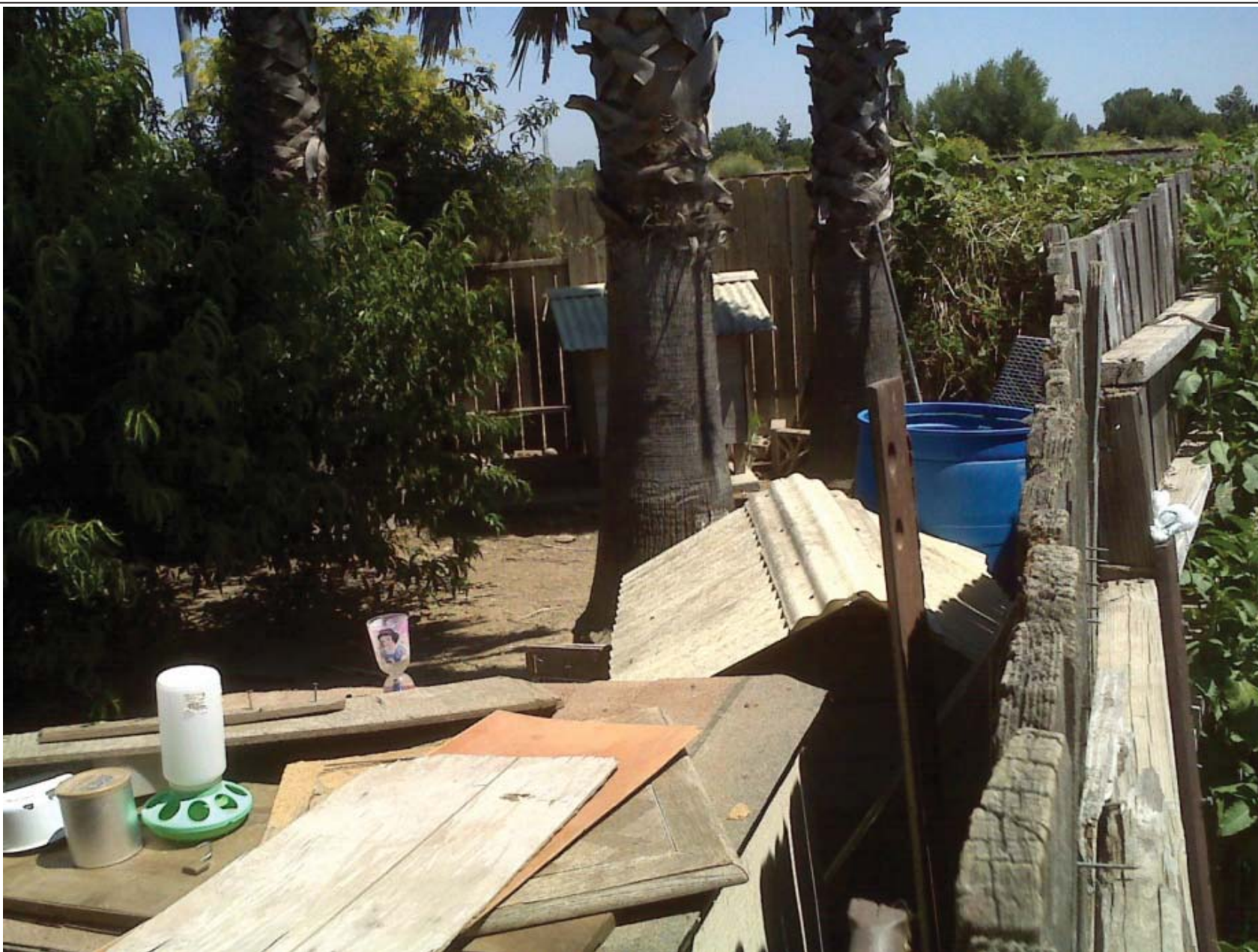


FIGURE 2-12
Photo of Xiong/Yang Partial Acquisition (east corner of Yang property looking north)

Source: Project Team, 2010.

EXHIBIT 'B'
SOUTHGATE UNIT NO 3
 BOOK 84 OF MAPS, AT PAGE 20, ORSC
 A PORTION OF SECTION 8, T.7 N., R.5 E., MDM
 CITY OF SACRAMENTO, SACRAMENTO COUNTY, CALIFORNIA
 SCALE: 1"=30' MAY 22, 2009

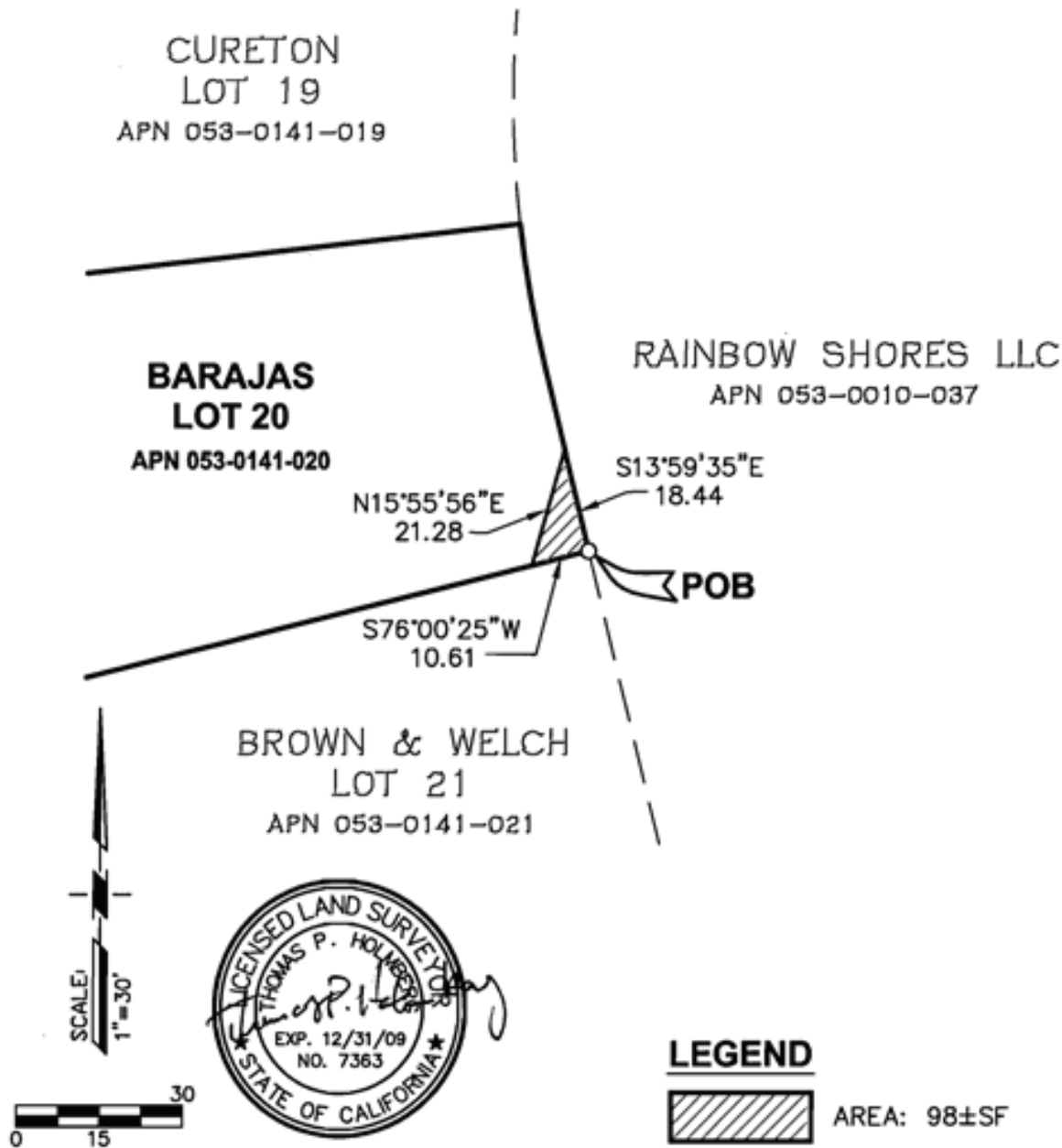


FIGURE 2-13
Plat Map of Barajas Partial Acquisition

Source: Sacramento County Assessor, 2010.



FIGURE 2-14
Photo of Barajas Partial Acquisition (southeast corner of Barajas property looking south)

Source: Project Team, 2010.

Table 2-4
Property Needed for Relocation of TPSS #10

Assessor's Parcel Number	Total Size of Parcel (sq ft)	Amount of Take (sq ft)	Percentage of Parcel to be Acquired^a
117-0131-021	75,158	75,158	100%

Source: Sacramento Regional Transit District, December 2010.

Note:

- a. Note that the IJAZ property is vacant. It contains no structures or other improvements.

Figure 2-15 shows the IJAZ property with the proposed take compared to the original take described in the SFEIS/SFEIR. The red dashed outlines in the exhibit show the current proposed take compared to the SFEIS/SFEIR approved take. Visual screening and landscaping treatments would be utilized to limit visual impacts. Figure 2-16 through Figure 2-18 show a plat map and photographs of the IJAZ property.

It should be noted that on December 14, 2009, the RT Board adopted an Addendum to the SFEIR that assessed the TPSS #10 relocation modification for purposes of CEQA. As such, the analysis contained in this IS/EA is being undertaken for purposes of FTA oversight and NEPA compliance only.

Tailtrack Extension at Cosumnes River College

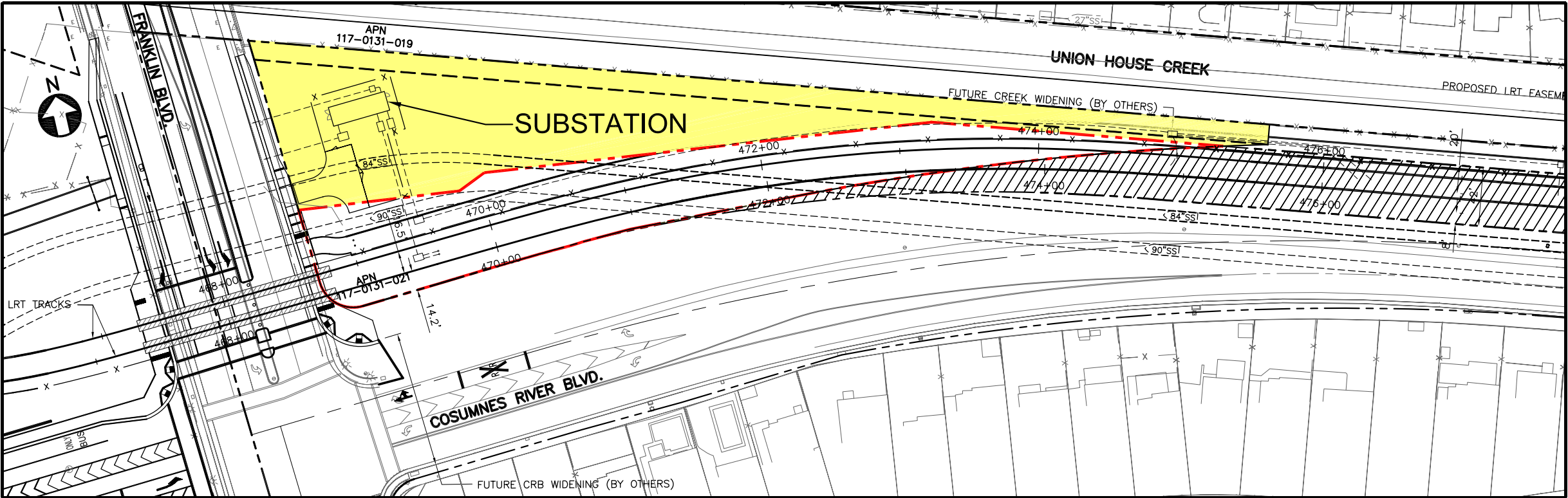
After approval of the SFEIS/SFEIR, it was determined that the operational efficiency of the Phase 2 Extension project would be enhanced if the tailtrack at the project's southern terminus at Cosumnes River College (CRC) were extended 400 feet to the south. This extension would be used to store additional LRT vehicles during non-commute and overnight hours. These vehicles would otherwise have to travel back to downtown Sacramento for storage. The tailtrack extension would allow for operational efficiencies, less deadhead travel of empty out-of-service cars, and reductions in vehicle miles traveled.

The proposed 400-foot extension is located within the ROW provided by CRC on its campus for the Phase 2 project (see Figure 2-19 for an aerial view of the proposed extension area). No additional land acquisition would be required for the extension. The tailtracks would be extended southwards between a recently constructed CRC parking lot and a grass-covered berm that separates the CRC campus from Bruceville Road. Figure 2-20 shows the approximate location of the tailtrack extension in relation to the existing campus and development.

It should be noted that on December 14, 2009, the RT Board adopted an Addendum to the SFEIR that assessed the tailtrack extension modification for purposes of CEQA. As such, the analysis contained in this IS/EA is being undertaken for purposes of FTA oversight and NEPA compliance only.

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IJAZ PARCEL



LEGEND



-  NEW PROPOSED ACQUISITION
-  ORIGINAL PROPOSED AQUISITION

FIGURE 2-15
TPSS #10 Relocation, Comparison of Acquisitions (IJAZ Property)

EXHIBIT 'B'
IJAZ CORPORATION
20080416-0579, ORSC
A PORTION OF SECTIONS 17, T 7 N, R 5 E, MDM
CITY OF SACRAMENTO, SACRAMENTO COUNTY, CALIFORNIA
SCALE: 1"=200' MAY 22, 2009

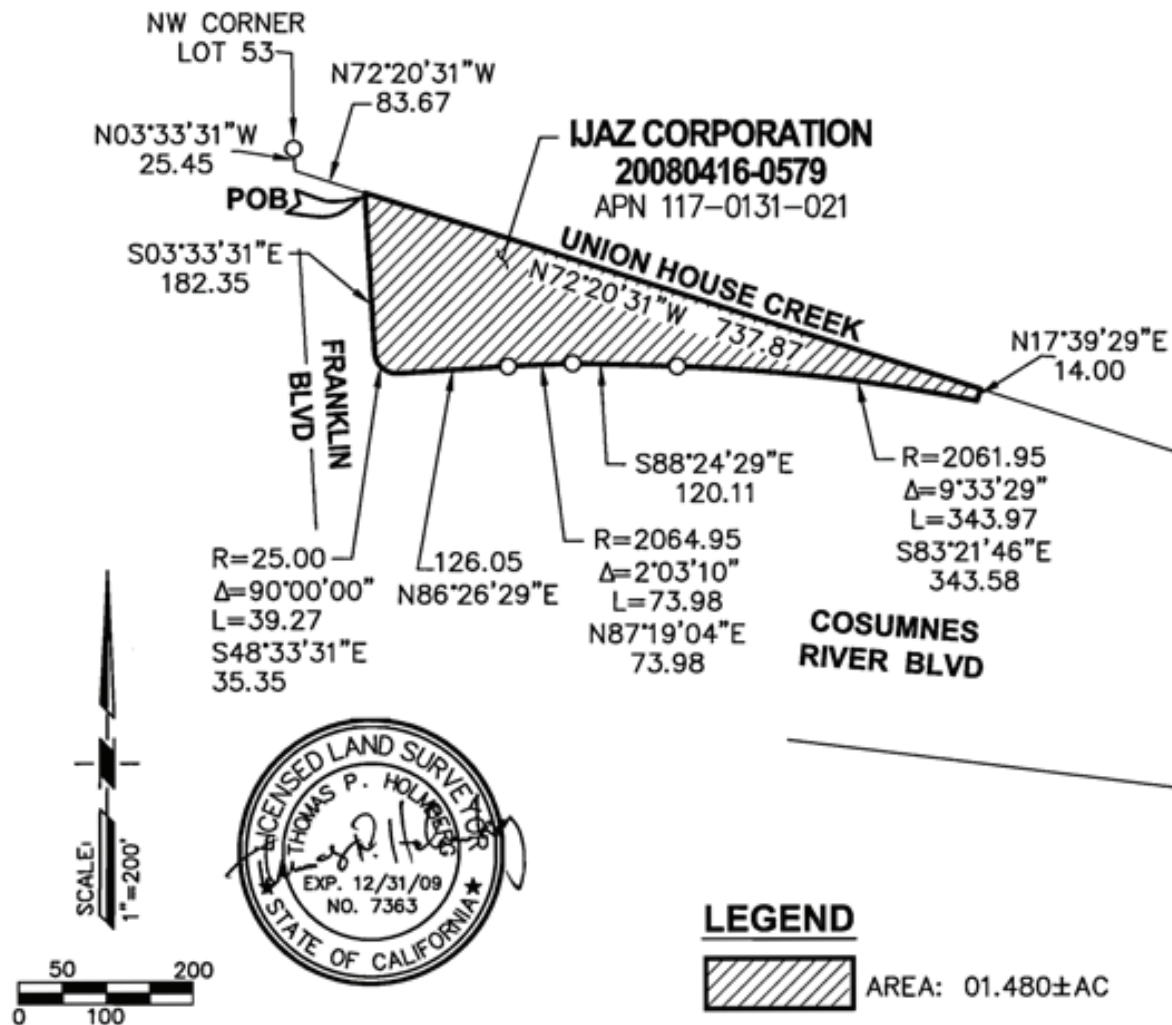


FIGURE 2-16
Plat Map for IJAZ Acquisition

Source: Sacramento County Assessor, 2010.



FIGURE 2-17
Photo of IJAZ Acquisition (looking east from the corner of Franklin and Cosumnes River Boulevard)

Source: Project Team, 2010.



FIGURE 2-18

Photo of IJAZ Acquisition (looking west towards Franklin Boulevard from the west end of IJAZ property)

Source: Project Team, 2010.



FIGURE 2-19
Tailtrack Extension Aerial View

Source: Google Earth Pro, 2010.



FIGURE 2-20
Photograph of Tailtrack Extension Area Looking South

Source: Project Team, 2010.

Construction Activities Associated With Project Implementation

The construction associated with each of the alternatives and design options would be the same as that already evaluated in the SFEIS/SFEIR. Overall, general work on the Phase 2 project would proceed in typical fashion, and would be composed of the following principal components:

1. Utility location identification and protection, including installation of sheet piling to protect pipelines and buried utilities;
2. Site preparation to include clearing, grubbing and grading of the area for the LRT tracks, stations, and electrical substations pads;
3. Construction of track roadbed, including installation of underdrainage systems, vibration mitigation materials, geotextile fabrics, and surface drainage improvements to include swales and pipes;
4. Installation of foundations for catenary poles and wayside signals;
5. Placement of concrete slabs for electrical substations pads;
6. Installation of retaining walls and sound walls (see more detailed information on soundwall installation below); and
7. Installation of tracks, traction power systems, catenary poles, and other LRT components.

For portions of the alignment that would be required to receive a soundwall, RT would work closely with each property owner and/or their designated representative to limit the inconvenience caused during construction. Prior to any work taking place, a letter would be sent to each property owner and/or tenant alerting them to a specific start date at least 15 days in advance. A notice would also be left at each affected property alerting the occupant to the construction start date.

In addition to the property RT would purchase to accommodate the project, a 10-foot temporary construction easement would be utilized for each backyard to provide space for construction of the soundwall. See Appendix A for detailed aerial exhibits that show the location of both the soundwalls and the temporary construction easements required for each of the alignment design options. Soundwall construction would commence with crews installing temporary security fencing to secure the backyard. The fence would be installed 10 feet west of the future soundwall location to incorporate the temporary construction easement. Once the temporary security fencing is installed, crews would remove any existing fencing and clear the area where the soundwall would be built. Most of the soundwall construction would take place on the UPRR side of the wall, and not on the property owner's parcel. This would be done to limit the inconvenience to each homeowner. Once the soundwall is finished, crews would access the 10-foot temporary construction easement to clean up the homeowner's side of the wall, restore any landscaping/improvements that were disturbed, and also to connect the existing side fences with the soundwall. RT would be responsible for returning affected properties to their prior condition, including replacement of any damaged or removed landscaping, fencing, outbuildings, or other improvements. Once this work is completed, the temporary security fencing would be removed and the owner and/or tenant would then have full utilization of their backyard. It is anticipated that the duration

of work from the setting of the temporary fence to restoration of the backyard would be approximately 4 to 6 months.

Grading, track roadbed preparation, and track construction are estimated to take 1 to 1-1/2 years along the entire 4.3-mile Phase 2 alignment. Work within the discrete portions of the alignment that are the subject of this IS/EA would not necessarily require the entire construction period. Instead, work would generally proceed linearly from one end of the project to the other. Work would be performed with equipment such as scrapers, graders, bulldozers, front end loaders, backhoes, earth compactors, vibratory hammers, paving machines, small cranes, and water trucks. Excavated material or fill material would be moved by dump trucks.

2.4 ALTERNATIVES CONSIDERED BUT NOT SUBJECTED TO DETAILED ANALYSIS

A number of additional design options were considered that would have met some of the design criteria of the Phase 2 Extension Project. These design options specifically relate to the UPRR/RT track separation requirement. However, the design options below did not meet the defined purpose and need of the project (see Section 1 of this IS/EA) in that they would not have met design criteria associated with operational safety and efficiencies. Based on their deficiencies in meeting the purpose and need of the project, the following design options were dropped from further consideration and were not subjected to detailed analysis.

Design Option D: Realignment of UPRR Tracks 5 Feet Eastwards and 25-Foot Track Separation

When RT learned of UPRR's revised separation requirements, as well as the requirement for a crash wall for separations of less than 50 feet, RT requested that UPRR consider moving the UPRR tracks 5 feet to the east. This option would have allowed the RT tracks to remain in their originally planned alignment, and also would have provided for the minimum 25 feet of separation. This option was rejected by UPRR, principally because of the disruption to its active freight line from construction of the realignment. The realignment would move the UPRR tracks closer to sensitive receptors to the east, and could therefore create noise and vibration impacts for those residences. Finally, UPRR also indicated that a crash barrier and intrusion detection system would still need to be installed if the separation between the UPRR and RT tracks was less than 50 feet, at a cost of \$10 million. Based on each of these considerations, this option was not carried further for additional evaluation.

Design Option E: Realignment of UPRR Tracks 5 Feet Eastwards, Installation of Crash Wall, and Minimum 25-Foot Track Separation

This option would have entailed the following principal components: 1) relocation of the UPRR tracks 5 feet to the east of their present alignment; 2) installation of the proposed RT double tracks in their proposed alignment, with one track on the east side of the SMUD power poles and one track to the west; and 3) installation of a railway industry-compliant crash wall between the relocated UPRR mainline track and the RT track.

Advantages of this option include:

1. UPRR requirements for track separation would be met (with installation of the crash wall);
2. RT tracks would remain in their proposed alignment; and
3. Real estate acquisitions and encroachment impacts would be the same as those already evaluated in the SFEIS/SFEIR. No additional acquisitions along the UPRR corridor would be needed.

Disadvantages of this option include:

1. UPRR would still need to approve the UPRR track realignment;
2. Realignment of the UPRR tracks would result in the same impacts identified for Option D, including increased noise and vibration exposure for adjacent residences to the east and the possible need for enhanced sound barriers;
3. Realignment of the UPRR tracks would necessitate a gradual transition into the relocated UPRR alignment to achieve the required approach tangents for UPRR locomotives and railcars, and would thus extend the limits of the realignment project further to the north and south of the project area, with associated impacts and costs;
4. Access and maintenance of the SMUD line would remain a challenge since the RT tracks would straddle the SMUD poles – one track on the west and one track on the east; and
5. Substantial impacts to the project budget would result and would reduce unallocated contingency to levels unacceptable in the FTA New Starts process, because the cost of the crash wall would be approximately \$10-14 million. Subsequent impacts to the project budget and schedule would render the project infeasible.

Based on each of these considerations, including the additional impacts and costs and their adverse effects on the project's eligibility for federal funding, this option was not carried further for additional evaluation.

Option F: Placement of RT Tracks to West of SMUD Line and 42-Foot Track Separation

Following the rejection by UPRR of Design Option D, RT requested that UPRR consider the option of allowing RT to place both of its tracks on the west side of the SMUD line. While not meeting the 50-foot separation requirement, it would increase the separation to approximately 42 feet, and would also lessen the amount of real estate acquisition that would be required by RT along the western side of the alignment. This option was also rejected by UPRR because it would not meet their 50-foot separation standard. As such, this option was not carried further for additional evaluation.

Option G: Realignment of UPRR Tracks 30 Feet Eastwards and 50-Foot Track Separation

The final preliminary option considered was the shifting of the UPRR tracks approximately 30 feet eastward to the eastern edge of UPRR's existing ROW. This option would allow the RT tracks to remain in their originally planned alignment and would provide for a full 50 feet of separation between the UPRR and RT tracks. This option was rejected by UPRR, primarily because it would preclude UPRR from

adding a second track within their ROW at some point in the future. As noted for Option D, construction of realigned UPRR tracks to the east would disrupt existing freight service along the corridor and place the UPRR line closer to the residences on the eastern side of the alignment. This option would also necessitate a gradual transition into the relocated UPRR alignment to achieve the required approach tangents for UPRR locomotives and railcars, and would thus extend the distance of the realignment project further to the north and south of the project area, with associated impacts and costs. Based on each of these considerations, this option was not carried further for additional evaluation.

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Section 3

Environmental Analysis

3.0 INTRODUCTION

This section presents an overview of the environmental analysis and provides background information to assist the reader in understanding the analysis. The organization of the environmental analysis is described, as well as the methodology used to determine, classify, and present the effects of the project alternatives described in Section 2.

Organization of the Environmental Analysis

The subsections in Section 3 are organized by environmental resource area (e.g., aesthetics and visual resources, cultural resources, land use, etc.). Nine separate resource areas are presented in these subsections, plus an additional section that briefly assesses issues that were not subject to detailed evaluation.

For each environmental resource area, the analysis follows the same presentation and organization as described below.

Introduction. The introduction presents the reader with an overview of the topic and the issues and concerns that are discussed.

Environmental Setting. This discussion presents existing conditions for the environmental resource area under discussion. As applicable, this section defines the geographic area from which information on these conditions is gathered.

Applicable Policies and Regulations. This section summarizes relevant laws, regulations, and plans that serve to provide regulatory guidance for each resource area.

Impact Assessment and Mitigation Measures. This discussion considers how the existing conditions would be affected by the two project alternatives. The major elements of this discussion are described below.

Standards of Significance. The “standards of significance” describe the criteria by which an impact is declared significant and therefore in need of mitigation (i.e., actions to minimize the effects). These criteria are largely based on the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.), which generally describe circumstances when impacts would be considered significant. However, since this IS/EA is a combined CEQA and NEPA document, and since CEQA and NEPA use the term “significant” differently, consideration is also given to the definition of significance that is appropriate for NEPA evaluation.

This IS/EA has been prepared in compliance with the more stringent or complete requirements, whether they be federal or state. Where possible, criteria are based on state or federal standards. For example, air quality significance criteria, or thresholds, are based on the state and federal ambient air quality standards; noise significance thresholds are likewise based on criteria defined by the Federal Transit Administration (FTA). In other cases, such as visual resources, the significance criteria are based on professional standards.

Environmental Analysis. The environmental analysis identifies and compares effects of each of the two project alternatives and three design options, as well as the effects of the alternatives on existing conditions. Whenever possible, the impacts are quantified so that the effects of the alternatives can be compared.

Effects can generally be thought of as the deviation from existing conditions. Since this IS/EA serves as a combined CEQA/NEPA document, below is a description of how effects are discussed in this document for both CEQA and NEPA.

CEQA requires that environmental documents determine significant or potentially significant impacts. The CEQA significance thresholds applicable to the proposed project are qualitative and quantitative. Some impact categories lend themselves to scientific or mathematical analysis and, therefore, to quantification. For other impact categories that are more qualitative or are dependent on changes to the existing setting, a hard-and-fast threshold is not generally feasible. In these cases, the definition of significant effects from the CEQA Guidelines (Section 15382), “a substantial adverse change in physical conditions,” has been applied as the significance criterion.

For CEQA, effects are classified as “significant,” “potentially significant,” “less than significant,” “no impact,” and “beneficial.” These five impact levels are defined as follows:

- Significant impacts include effects that exceed the standards of significance. For example, air emissions that exceed federal ambient air quality standards, or elimination of a rare or endangered species would be a significant impact.
- Potentially significant impacts include effects where it is not precisely evident whether a significant impact would occur; the analysis in these instances conservatively assesses the worst-case conditions, but the discussion acknowledges that there is uncertainty regarding the severity of the impact.
- Less-than-significant impacts include impacts that do not exceed the standards of significance. For example, if an area has been determined to be adjacent to an area of important habitat for a sensitive species, but if it could be determined that the project would not directly or indirectly impact that species, then impacts could be considered less than significant. Similarly, if the ambient noise levels increased because of project operations, but the noise levels did not exceed FTA criteria for a severe or moderate impact, the effect would be considered less than significant.
- No impact includes a condition when the project alternative would clearly not result in any impact at all. For example, if there are no significant historic resources or faults within the

project corridor, impacts to cultural resources or effects from ground rupture, respectively, would not occur.

- Beneficial effects include effects that enhance or improve an existing condition (for example, reduction in fuel consumption in the region due to fewer automobiles on the road with the implementation of passenger rail service).

According to the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations Sections 1500-1508), the determination of a significant impact under NEPA is a function of context and intensity. Context means that the significance of an action must be analyzed in several contexts, such as society as a whole (i.e., human, national), the affected region, the affected interests, and the locality. Both short- and long-term effects are relevant. Intensity refers to the severity of impact. To determine significance, the severity of the impact must be examined in terms of the type, quality, and sensitivity of the resource involved; the location of the proposed project; the duration of the effect (i.e., short- or long-term), and other considerations of context. Adverse impacts will vary with the setting of the proposed action and the surrounding area.

For each impact identified as being significant under CEQA this IS/EA suggests mitigation measures to avoid, minimize or eliminate the negative effect for each of the alternatives. The discussion indicates whether the mitigation measures individually or collectively avoid or minimize the effect. If the mitigation measures would not successfully minimize the effects to a suitable level, the impacts are classified as “significant and unavoidable” for purposes of CEQA.

Enumeration of Impacts and Mitigation

Each impact is numbered using an alpha-numerical system that identifies the environmental issue. For example, *LU-1. Land Use Compatibility*, denotes the first impact discussion in the Land Use subsection. The letter codes used to identify the environmental issues discussed in this section are:

- | | |
|--------------------------------------|--|
| • VQ – Aesthetics and Visual Quality | • EJ – Environmental Justice |
| • AQ – Air Quality | • LU – Land Use |
| • BIO – Biological Resources | • NOI – Noise and Vibration |
| • CC – Climate Change | • POP – Population, Housing, and Socio-Economics |
| • CR – Cultural Resources | |

Evaluation of Project Components and Alternatives

This IS/EA evaluates two alternatives: Alternative 1 (No Project) and Alternative 2 (Modifications to the Phase 2 Extension Project). Alternative 2 includes proposed modifications to five specific components within the Phase 2 Extension project area. For one of these components, the LRT Tracks Adjacent to UPRR Mainline Tracks component, three design options have been identified. Thus, Alternative 2 consists of a hierarchy of three levels that can be visualized in outline form as follows:

Alternative 2 – Modifications to the Phase 2 Extension Project

- Realignment of the LRT Tracks Adjacent to Union Pacific Railroad Tracks
 - Design Option A: Realignment of RT Tracks 33 Feet Westward, Minimum 53-Foot Track Separation
 - Design Option B: Realignment of RT Tracks 22 Feet Westward, Installation of Crash Wall, and Minimum 42-Foot Track Separation
 - Design Option C: No Crash Wall, No UPRR ROW Acquisition, and 90-Foot Track Separation
- PG&E Natural Gas Pipeline Relocation (Applicable to Design Option B only)
- Morrison Creek Levee Setback
- Traction Power Substation (TPSS) #10 Relocation
- Tailtrack Extension at Cosumnes River College

For some environmental resource areas, the project components, including the three LRT alignment options, would not differ in their effects. In these instances, where the different components result in the same effect, the analysis is presented as the aggregate effects of Alternative 2 without specifically mentioning the components or the alignment options. For example, if there are no designated scenic resources at any point along the Phase 2 Extension project corridor, there is little value to be gained by evaluating each of the components and design options separately for their effects on scenic resources.

For other topics, the project components and design options may have site-specific and differing effects. For instance, effects to visual quality and character vary by location, since the setting, context, and sensitivity are dependent on the affected study area. For these topics, the IS/EA describes the existing environment in the vicinity of each component, as well as the effect of each individual component and option.

Cumulative Analysis

To fully understand the environmental implications of a proposed project, CEQA and NEPA require that a proposed project be examined for its individual effects on the existing environment as well as its cumulative effects in conjunction with other reasonably foreseeable development projects. These cumulative impacts refer to two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts. For planning purposes, the cumulative effects of the project are studied for the year 2030. Cumulative impacts are discussed in Section 4.

3.1 AESTHETICS AND VISUAL QUALITY

Introduction

The aesthetic quality of an environment is shaped by the built and natural features that comprise the visual landscape, or setting. Built features include man-made structures such as buildings, parking areas, roads, roadway interchanges and overpasses, aboveground utilities, signs, and lighting fixtures. Natural features include landforms, rock outcrops, vegetation, and water bodies. These resources together define the scale relationships, and the line, form, color, and texture of an area's landscape. A project may enhance or adversely affect the visual quality of a landscape setting through its effect on the built and natural features that define the setting. Scenic views to and from the project area are also important considerations in characterizing the effects of a proposed project. A proposed project may interfere with or eliminate scenic views or may result in the removal of a scenic resource.

Environmental Setting

Overview

The SFEIS/SFEIR did not assign visual resource classifications (high, moderate, low quality views) as part of its analysis, nor did it identify any scenic vistas in the project area. The SFEIS/SFEIR described the Phase 2 Extension corridor as primarily an urban setting, with occasional areas of open space comprised primarily of abandoned agricultural fields, vacant lots, and disturbed vegetation. No portion of the corridor was described as possessing qualities that could be considered visually distinctive or scenic. The figures in Section 2 of this IS/EA contain photographs of each of the proposed Phase 2 modification areas. Readers are referred to those photographs for an overview of the existing visual setting in the Phase 2 Extension project corridor.

LRT Tracks Adjacent to UPRR Mainline Tracks

The existing UPRR railroad and Sacramento Municipal Utility District (SMUD) high-tension power poles are the dominant visual elements along the northern segment of the RT alignment. See Figure 2-1 for an overview of this section. Single family residences are located on both sides of the freight rail right-of-way, and are typically separated from the rail corridor by wooden fences that define the boundaries of the back yards. No portion of this area has been designated as visually distinctive or scenic.

PG&E Natural Gas Pipeline Relocation (Applicable to Design Option B only)

As part of the previously approved Phase 2 Extension project, the PG&E natural gas pipeline would be relocated to the Detroit Boulevard right-of-way for its entire length of approximately one mile. Detroit Boulevard is a local residential street with low density single family dwellings fronting onto the street. Dwellings adhere to a uniform setback from the street, and lawns and mature trees constitute the dominant landscape. Topographically, the neighborhood is relatively flat and houses line both the west

and east sides of the street inhibiting distant views of the surrounding area. Approximately midway along Detroit Boulevard, the relocated pipeline would reconnect with the existing natural gas pipeline to the east via a utility corridor that is occupied by PG&E electrical transmission lines. Since the establishment of the utility corridor in the 1970s, properties that abut the corridor have encroached into the corridor, informally incorporating the corridor into backyards through the construction of fences in a non-uniform and un-planned manner. See Figure 2-10 for a photograph of these parcels. No portion of this area has been designated as visually distinctive or scenic.

Morrison Creek Levee Setback

At the Morrison Creek crossing of the UPRR, the RT right-of-way would leave the UPRR alignment and veer slightly to the west side of Morrison Creek heading south along the edge of an abandoned agricultural field. See Figures 2-12 and 2-14 for views of these parcels. Residences on the west side of the UPRR corridor in this area have distant views across the proposed alignment to the south and views of vegetation to the southeast near the Morrison Creek levee. This area, however, consists primarily of highly disturbed vegetation, abandoned croplands, and debris. No portion of this area has been designated as visually distinctive or scenic.

TPPS #10 Relocation

Under the proposed modification, TPPS #10 would be relocated to the vacant IJAZ property at the northeast corner of the Franklin Boulevard and Cosumnes River Boulevard intersection. See Figures 2-17 and 2-18 for an overview of this property. The IJAZ property is a vacant lot on the corner of a busy intersection. The parcel is flat and covered with weedy vegetation and debris. The vegetation is occasionally disked or mowed for weed abatement. A SMUD substation is located west of the site across Franklin Boulevard, and associated utility poles are also located in the area. Street lighting, traffic signals, and other typical street features define the urban visual landscape of the area. To the south and east, the landscape is dominated by single family and multiple-family dwellings with fence lines separating these properties from adjacent streets and vacant lots. No portion of this area has been designated as visually distinctive or scenic.

Tailtrack Extension at Cosumnes River College

The tailtrack extension would be constructed on the eastern side of a recently constructed parking lot used by students, staff, and faculty of Cosumnes River College. See Figure 2-20 for a photo overview of the area. The parking lot is bordered on the south and east side by a tall grass-covered earthen berm that serves to enclose the parking lot and limit views from persons traveling on Bruceville Road to the east and Calvine Road to the south. The east side of Bruceville Road contains vacant undeveloped lots and a recently constructed sports field complex. The south side of Calvine Road contains a two-story apartment complex consisting of multiple units. No portion of this area has been designated as visually distinctive or scenic.

Impact Assessment and Mitigation Measures

Standards of Significance

The project alternatives would have a significant adverse effect on visual quality if they:

- Result in a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Environmental Analysis

VQ-1. Obstruct Scenic Vistas

Alternative 1 – No Project. The No Project alternative would result in implementation of the Phase 2 Extension Project as analyzed in the previously adopted SFEIS/SFEIR. The SFEIS/SFEIR reported that there are no scenic vistas in the area. As such, the SFEIS/SFEIS determined that there would be no conflict with applicable federal laws and regulations relating to scenic vistas as a result of the Phase 2 Extension project. Under CEQA, there would likewise be no impact to scenic vistas.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously approved Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. Since there are no scenic vistas within the Phase 2 Extension project area, the implementation of Alternative 2 would not conflict with applicable federal laws and regulations relating to scenic vistas. There would be no impact on scenic vistas under CEQA, for the same reasons.

VQ-2. Damage Scenic Resources

Alternative 1 – No Project. The No Project alternative would result in implementation of the Phase 2 Extension Project as analyzed in the previously adopted SFEIS/SFEIR. The SFEIS/SFEIR reported that there are no scenic resources, such as distinctive buildings, historic structures, rock outcroppings, panoramic high-quality views, or stands of mature trees, in the area. As such, the SFEIS/SFEIR determined that there would be no conflict with applicable federal laws and regulations relating to scenic resources. Under CEQA, there would be no impact since there are no scenic resources to be affected.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously approved Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. The SFEIS/SFEIR reported that there were no scenic

resources within the Phase 2 Extension project area. That situation has not changed. As such, there would be no effect to scenic resources as a result of implementation of Alternative 2. Under CEQA, there would be no impact to scenic resources, for the same reasons.

VQ-3. Degrade Existing Visual Character

Alternative 1 – No Project. The No Project alternative would result in implementation of the Phase 2 Extension Project as analyzed in the previously adopted SFEIS/SFEIR. The SFEIS/SFEIR reported that all visual changes resulting from the Phase 2 extension would be consistent with the existing environment and visual character of the area. As such, the SFEIS/SFEIR determined that there would be no conflict with applicable federal laws and regulations relating to visual character.. Under CEQA, the impact to visual character would be less than significant, for the same reasons.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously approved Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. Each of the proposed modifications is assessed below for their potential impacts to existing visual character.

LRT Tracks Adjacent to the UPRR Mainline Tracks. The existing visual character of this area is vacant and visually indistinct, with the exception of the UPRR tracks that pass through the area. The area on either side of the UPRR tracks consists largely of weedy vegetation and debris, bordered by the backyard fences of the adjacent residences. Impacts to aesthetics and visual quality resulting from implementation of Design Options A, B and C are assessed below:

- **Design Option A** – Implementation of this design option would have an overall beneficial impact on the visual character of the area, since it would eliminate the weedy vegetation and debris within the UPRR corridor. In addition, implementation of this option would consolidate the irregular nature of the existing fences into a uniform appearance associated with the sound wall on the west side of the corridor. As such, implementation of this option would not conflict with applicable federal laws and regulations relating to visual character. Under CEQA, the alterations to the existing visual character would be less than significant, for the same reasons.
- **Design Option B** – Since the RT track location under Option B would only shift slightly eastwards from the alignment proposed for Option A, the visual effects of implementing this option would be essentially identical to those of Option A. As with Option A, implementation of this option would consolidate the irregular nature of the existing fences, and would eliminate the weedy vegetation and debris that is present on the west side of the alignment. Therefore, in the same manner as Option A, implementation of this option would not conflict with applicable federal laws and regulations relating to visual character. Under CEQA, the impact would be less than significant, for the same reasons.
- **Design Option C** – Implementation of this design option would result in a substantial change to the existing visual character of the area. All of the existing residences along the

western side of the alignment would be removed to accommodate the RT tracks. The 90 feet of land between the UPRR tracks and the RT tracks would be vacant. Under existing conditions, there is no regular maintenance and upkeep of vacant land within the corridor, and that condition would likely remain with implementation of this option. Therefore, this larger area would likely become an area of weedy vegetation and debris in much the same manner as the existing right-of-way. However, these effects would not necessarily degrade the visual character of the area, since the area would appear unchanged. Therefore, implementation of this option would not conflict with applicable federal laws and regulations relating to visual character. Under CEQA, the impact would be less than significant, for the same reasons.

PG&E Natural Gas Pipeline Relocation (Applicable to Design Option B only). Relocation of the natural gas pipeline beneath Detroit Avenue would have no permanent visual effects since the pipeline would be buried beneath the street. With regard to the existing utility corridor (Lot C) that would be utilized for the southern portion of the relocation, the existing visual character of this area is largely defined by an alleyway that is encroached upon at various locations by backyard fences. Most of the area could be described as vacant, and contains many of the visual characteristics associated with an urban vacant lot, such as weedy vegetation and debris. The implementation of Alternative 2, Design Option B, would improve the existing visual character of the proposed pipeline utility corridor by creating a uniform and consistent appearance to the fences in the area. The corridor would be maintained by PG&E. As such, there would be no conflict with applicable federal laws and regulations relating to visual character as a result of implementation of Alternative 2, Design Option B. Under CEQA, there would be no impact to visual character, for the same reasons.

Morrison Creek Levee Setback. The modification proposed in Alternative 2 in the vicinity of the Morrison Creek Levee is minor in nature and would not be substantially different than that assessed in the SFEIS/SFEIR. The proposed modification would shift the alignment approximately 30 feet westwards, and would not entail the construction of additional structures or other features that have not already been evaluated in the SFEIS/SFEIR. The SFEIS/SFEIR reported that there would be no adverse effect in this regard under NEPA, and that the effect under CEQA would be less than significant. The proposed modification to the alignment in this area is not substantial in nature and is very similar to that assessed for Alternative 1, since it would simply shift the RT tracks slightly westward. As with Alternative 1, the area for this modification is vacant land covered with weedy vegetation and debris. As such, implementation of this component of Alternative 2 would not conflict with applicable federal laws and regulations relating to visual character. Under CEQA, the impact to visual character would be less than significant, for the same reasons.

TPSS #10 Relocation. The TPSS that is proposed for relocation to the IJAZ property is a 15' x 42' x 10' high enclosure that would be surrounded by fencing and landscaping to provide visual screening. This location was already identified in the SFEIS/SFEIR as the site of LRT tracks and an instrument house under the Phase 2 Extension project. The relocation of the TPSS would not change the overall visual character in the immediate area since the facility would be

a utility structure that would be visually compatible with the SMUD substation west of the site across Franklin Boulevard, and with the utility poles, street lighting, and signals in the immediate area. In addition, visual screening and landscaping would be incorporated to soften the appearance of the structure. As such, implementation of this component of Alternative 2 would not conflict with applicable federal laws and regulations relating to visual character. Under CEQA, the impact would be less than significant, for the same reasons.

Tailtrack Extension at Cosumnes River College. The extension of the tailtracks 400 feet to the south at the CRC station would be within the boundaries of the existing CRC campus and adjacent to the proposed parking structure and existing parking lot. Although residences are located to the south at the southwest corner of Bruceville Road and Old Calvine Road, views of the tailtrack extension would be partially screened by an existing raised embankment that surrounds the entire CRC campus. This area is already proposed for an LRT station and associated facilities. The extension would not differ substantially from the facilities already approved as part of the Phase 2 Extension project, and views of the area from surrounding locations would not be degraded, just as they were not determined to be degraded in the previously adopted SFEIS/SFEIR. As such, implementation of this component of Alternative 2 would not conflict with applicable federal laws and regulations relating to visual character. Under CEQA, the impact on visual character would be less than significant, for the same reasons.

VQ-4. Light and Glare

Alternative 1 – No Project. The SFEIS/SFEIR determined that any lighting associated with the project would be minimal and would be designed in such a manner that lighting impacts onto surrounding properties would not adversely affect them. As such, it was determined that there would be no conflict with applicable federal laws and regulations relating to light and glare as a result of implementation of the Phase 2 Extension project. Under CEQA, the impact would be less than significant, for the same reasons.

Alternative 2 – Modifications to the Phase 2 Extension Project. The proposed modification to the Phase 2 Extension project would not create any new light sources not already assessed in the SFEIS/SFEIR. Lighting associated with the project would be consistent with existing light sources in the project vicinity. As such, there would be no conflict with applicable federal laws and regulations relating to light and glare as a result of implementation of Alternative 2. Under CEQA, the impact from new light and glare would be less than significant, for the same reasons.

3.2 AIR QUALITY

Introduction

This air quality section summarizes baseline air quality information, the climate in the project area, federal, state, and regional air quality standards, and existing air quality conditions in the Sacramento area for “criteria air pollutants.” The purpose of this section is to examine the air pollutant emissions associated with the alternatives related to the modified Phase 2 Extension project. As described in Section 2, Project Alternatives, a No Project alternative is assessed as well. Predicted emissions are described and compared to regional, state, and federal ambient air quality standards.

Environmental Setting

Climate and Meteorology

The topography and climate of the Sacramento Valley Air Basin (SVAB) combine to give the area high pollutant potential. Air quality within the SVAB is degraded by pollution from dense population centers, heavy vehicular traffic and industry, combined with meteorological influences.

In summer months, air quality problems are created when a layer of warm valley air overlays a layer of cool air that blows in through the Carquinez Strait from San Francisco Bay. The warm upper layer forms a cap over the marine layer and inhibits the air pollutants from dispersing upward. The horizontal dispersal of the pollutants is limited by the surrounding mountains, and light summer breezes. This concentration of pollution allows the summer sunlight to generate high levels of smog.¹

During the fall and winter, air quality problems in the SVAB result from carbon monoxide (CO) and nitrogen dioxide (NO₂) emissions. Since CO is produced almost entirely from automobiles, the highest CO concentrations in the SVAB are associated with heavy traffic. CO concentrations are generally worst during the morning commute, due to the large number of cars and cold temperatures, and around 10:00 p.m., due to stagnant atmospheric conditions trapping CO in the area. NO₂ levels are also generally higher during autumn or winter days.

Existing air quality conditions in the region are reflected by measurements taken at Sacramento Metropolitan Air Quality Management District (SMAQMD) monitoring stations. The nearest monitoring station to the Phase 2 Extension project alignment is the T Street monitoring station in Sacramento, which is approximately 8.7 miles north of the alignment. Criteria pollutants monitored at the T Street monitoring station include ozone, CO (through 2005 only), NO₂, fine particulate matter (PM_{2.5}), and respirable particulate matter (PM₁₀). The nearest station that monitors sulfur dioxide (SO₂) and CO from 2006 to 2007 is the Del Paso Manor monitoring station, approximately 10.9 miles

¹ Ozone in the lower atmosphere is the chief component of urban smog. It can damage vegetation and interfere with the transfer of oxygen to sensitive tissues in the heart and brain. In the upper atmosphere high levels of ozone occur naturally and have the beneficial effect of blocking harmful rays from the sun.

north of the Phase 2 Extension project alignment. Data from the T Street and Del Paso Manor air monitoring stations were used to characterize existing conditions and to establish a baseline for estimating future conditions with and without the project alternatives.

Table 3.2-1 presents three years of data from the T Street and Del Paso Manor air monitoring stations to demonstrate pollution trends. SO₂ data are from the Del Paso Manor monitoring station; all other data are from the T Street station. The table also indicates federal and state standards for these pollutants, and where these pollutant standards have been exceeded.

Table 3.2-1
Summary of Ambient Air Quality Monitoring Data in the Project Area

Pollutant	Air Quality Standards	Year		
		2007	2008	2009
Ozone				
Maximum 1-hour concentration		0.109	0.107	0.102
# of days exceeding State 1-hour standard	>0.09 ppm	2	7	3
Maximum national 8-hour concentration		0.089	0.092	0.088
# of days exceeding national 8-hour standard	>0.075 ppm	2	9	4
Maximum state 8-hour concentration.		0.90	0.92	0.89
# of days exceeding state 8-hour standard	>0.070 ppm	7	18	13
Carbon Monoxide (CO)				
Maximum 8-hour concentration		3.20	2.84	2.84
# of days exceeding national 8-hour standard	≥9.0 ppm	0	0	0
# of days exceeding State 8-hour standard	>9.0 ppm	0	0	0
Nitrogen Dioxide (NO ₂)				
Maximum 1-hr concentration		0.064	0.065	0.068
# days exceeding State 1-hr Standard	>0.18 ppm	0	0	0
Respirable Particulate Matter (PM ₁₀)				
Maximum National 24-hour concentration		53.4	73.7	47.8
# of days exceeding national standard	> 150 µg/m ³	0	0	0
Maximum State 24-hr concentration		57.4	70.9	50.7
# of days exceeding State standard	> 50 µg/m ³	5	3	1
Fine Particulate Matter (PM _{2.5})				
Maximum national 24-hour concentration		58.0	66.1	37.7
# of days exceeding national standard	> 35 µg/m ³	27.6	15.4	3
Maximum state 24-hour concentration		58.0	78.9	50.1
# of days exceeding state standard	-	-	-	-
Sulfur Dioxide (SO ₂)				
Maximum national 24-hour concentration	-	-	-	-
# of days exceeding national standard	-	-	-	-
Maximum state 24-hour concentration		0.004	0.002	0.002
# of days exceeding state standard	>0.04 ppm	0	0	0

Source: California Air Resources Board, www.arb.ca.gov/adam, 2010.

Notes:

µg/m³ = micrograms per cubic meter of air.

ppm = parts by volume per million of air.

Applicable Policies and Regulations

Federal, state, and local laws and regulations are the basis for controlling air pollution. The major control efforts tend to focus on the six “criteria” air pollutants and the precursor compounds that react to form those pollutants. The federal Clean Air Act (CAA), as amended, and the California Clean Air Act (CCAA) are the primary drivers for attaining and maintaining the ambient air standards. These laws also provide the basis for the implementing agencies to develop mobile and stationary source control measures. Additionally, it is important to note that since approval of the Phase 2 Extension project SFEIS/SFEIR in 2008, state and federal criteria air pollutant standards have changed for the following pollutants: ozone, NO₂, SO₂, and PM_{2.5}. The analysis contained in this IS/EA reflects these standards. Criteria air pollutants are a group of pollutants for which regulatory agencies have adopted federal, state, or regional ambient air quality standards and pollution reduction plans. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen oxides (NO_x), sulfur oxides (SO_x), particulate matter, and lead. Ozone is a secondary pollutant that is formed in the atmosphere by chemical reactions between NO_x and reactive organic gases (ROG). Automobiles are the single largest source of NO_x and ROG in the SVAB.

Ambient Air Quality Standards

Based on the authority of the federal CAA, as amended, and the CCAA, federal and state regulatory agencies set upper limits on airborne concentrations of ozone, CO, NO₂, SO₂, particulate matter, and lead. Particulate matter is regulated as inhalable particulate matter less than ten microns in diameter (PM₁₀) and fine particulate matter less than 2.5 microns in diameter (PM_{2.5}).

The federal and state standards for these pollutants are summarized in Table 3.2-1. Such upper limits or “ambient air quality standards” are designed to protect all segments of the population including those most susceptible to the pollutants’ adverse effects (e.g., the very young, the elderly, individuals weak from illness or disease, or persons doing heavy work or exercise).

Attainment Status and Regional Air Quality Plans

Federal and state air quality laws require identification of areas not meeting the ambient air quality standards and implementation of regional air quality plans to eventually attain these standards. Under the federal CAA and the CCAA, the SVAB is a nonattainment area for ozone, PM₁₀, and PM_{2.5}.

Authority for air quality planning is divided between the state and federal governments. Under California law, air pollution control districts and air quality management districts have full regulatory authority for achieving ambient air quality standards. These standards are presented in Table 3.2-2 below. In Sacramento, SMAQMD holds that authority under their Air Quality Attainment Plan (AQAP).² Currently, the SVAB is identified as a nonattainment district for ozone, PM₁₀, PM_{2.5}, and as a measure of accountability the CCAA requires SMAQMD to prepare a triennial progress report to

² SMAQMD, *State Planning Requirements: California Clean Air Act*. Website: <http://www.airquality.org/plans/state/>, accessed on January 17, 2010.

assess their progress toward attaining the air quality standard for ozone.³ PM₁₀ reduction is facilitated through SB 656, which requires the California Air Resources Board (CARB) to develop a list of the most readily available, feasible, and cost-effective control measures.

Table 3.2-2
State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard	Federal Standard	
			Primary	Secondary
Ozone	1-hour	0.09 ppm (180 µg/m ³)	--	Same as Primary
	8-hour	0.070 ppm (137 µg/m ³)	0.075 ppm (160 µg/m ³)	Same as Primary
Carbon Monoxide	1-hour	20.0 ppm (23 mg/m)	35 ppm (40 mg/m ³)	---
	8-hour	9.0 ppm (10 mg/m ³)	9.0 ppm (10 mg/m ³)	---
Nitrogen Dioxide	1-hour	0.018 ppm (470 µg/m ³)	100 ppb (188 µg/m ³)	---
	Ann Geo Mn	0.030 ppm (57 µg/m ³)	53 ppm (100 µg/m ³)	Same as Primary
PM ₁₀	24-hour	50 µg/m ³	150 µg/m ³	Same as Primary
	Ann Arith Mn	20 µg/m ³	--	Same as Primary
PM _{2.5}	24-hour	---	35 µg/m ³	Same as Primary
	Ann Arith Mn	12 µg/m ³	15 µg/m ³	Same as Primary
Sulfur Dioxide	1-hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	---
	3-hour	---	---	0.5 ppm (1,300 µg/m ³)
	24-hour	0.04 ppm (105 µg/m ³)	--	---
Sulfates	24-hour	25 µg/m ³	---	---
Lead	30-day Avg	1.5 µg/m ³	---	---
	Calendar Qtr	---	1.5 µg/m ³	Same as Primary
	Rolling 3-Month Avg		0.15 µg/m ³	Same as Primary
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	---	---
Visibility Reducing Particles	8-hour observation	Extinction coefficient of 0.23 per kilometer ⁶	---	---

Source: CARB, Ambient Air Quality Standards, website: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>, accessed December 22, 2010.

In addition to planning responsibilities, SMAQMD has permitting authority over stationary sources of pollutants. Authority over mobile sources of pollutants is the responsibility of CARB. The U.S. Environmental Protection Agency (EPA) and CARB strategies for improving ambient air quality include a wide variety of motor vehicle emission control programs that are currently in place and will provide future emission reductions. Under federal law, the Sacramento Area Council of Governments (SACOG) is the regional Metropolitan Planning Organization (MPO) for the Sacramento area.

³ SMAQMD, 2009 Triennial Report and Plan Revision, December 2009. Website: <http://www.airquality.org/notices/stateplan/20100128TriennialReport2009Hearing.pdf>, accessed on January, 17, 2009.

SACOG is responsible for coordinating transportation system decision-making and the air quality effects of transportation systems.

Conformity Requirements

Federal regulations require that SACOG prepare Air Quality Conformity Determinations on its transportation plans and programs. The purpose of the conformity determination is to ensure that SACOG's plans and programs "conform" to all applicable federal air quality requirements. Based on the conformity requirements found in the Federal Clean Air Act, Section 176(c) (42 U.S.C. 7506(c)), and Title 40, Code of Federal Regulations, Part 93, Subpart A, conformity determinations must be based on the most recent estimates of on-road vehicle-based emissions. The emissions estimates must also be based upon the most recent population, employment, travel, and congestion forecasts from SACOG, acting as the federally designated MPO for the Sacramento region.⁴

A conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a federal nonattainment or maintenance area would equal or exceed specified annual emission rates (referred to as "de minimis" thresholds) or would be regionally significant. A project's direct and indirect emissions are regionally significant if they exceed 10 percent or more of a nonattainment or maintenance area's emissions inventory for that pollutant. For ozone precursors (ROG and NO_x) and PM₁₀, the de minimis thresholds depend on the severity of the nonattainment classification. For other pollutants, the threshold is set at 100 tons per year. The SVAB is designated as severe nonattainment for ozone, moderate nonattainment for PM₁₀, and nonattainment for PM_{2.5}. The de minimis thresholds for these pollutants are 25 tons per year for ozone precursors (ROG and NO_x), and 100 tons per year for PM₁₀ and PM_{2.5}.

Impact Assessment and Mitigation Measures

Standards of Significance

The project alternatives would have a significant adverse effect on air quality if they would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

⁴ SACOG, *2035 MTP, Appendix D5: Air Quality Conformity Determination*. Website: <http://www.sacog.org/mtp/2035/final-mtp/Appendices/Appendix%20D5%20Air%20Quality%20Conformity%20Determination.pdf>, accessed on January 17, 2010.

Environmental Analysis

AQ-1. Conflict with Air Quality Plan

Alternative 1 – No Project. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. The AQAP focuses on regulating stationary sources, transportation, and indirect sources of air pollutant emissions, and is the applicable air quality plan for the Phase 2 Extension project area. For the purposes of Alternative 1, transportation and construction are the most relevant sources of emissions. As determined in Section 4.3.3.3 of the SFEIS/SFEIR, the Phase 2 Extension project would result in a reduction of local and regional vehicle miles traveled (VMT), which supports the attainment goals set forth by the AQAP. In addition, the SFEIS/SFEIR reported that construction-related emissions under Alternative 1 would not exceed either the SMAQMD construction thresholds or the federal thresholds for air pollutant emissions. Based on these considerations, Alternative 1 would be consistent with the AQAP. Further, implementation of the Phase 2 project was identified in the AQAP as a control measure needed to gain attainment of the goals in the plan. As such, the SFEIS/SFEIR determined that there would be no effect with regards to conflicts with air quality plans as a result of the Phase 2 Extension project. Under CEQA, there would be no impact with regards to conflicts with air quality plans.

Alternative 2 – Modifications to the Phase 2 Extension Project. The goal of the SMAQMD AQAP is to bring the region into compliance with the state ambient air quality standards, in particular with state ozone and particulate matter thresholds. Currently, SVAB is currently in nonattainment for ozone, PM₁₀, and PM_{2.5}.

The proposed modifications under this alternative would not result in additional train revenue miles, railcars, or stations to the South Line LRT system, beyond those that have already been assessed in the SFEIS/SFEIR. The modifications would not alter the beneficial reduction in automobile VMT that is predicted to result from implementation of the Phase 2 Extension project. Therefore, implementation of Alternative 2 would not change the expected air quality impacts of the Phase 2 Extension project as outlined in the SFEIS/SFEIR. As a result, this alternative would not conflict with or obstruct implementation of the AQAP adopted by SMAQMD and there would be no effect with regards to conflicts with air quality plans. Under CEQA, there would be no impact.

AQ-2. Violate Air Quality Standards

Alternative 1 – No Project. This alternative would result in construction of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. The SFEIS/SFEIR reported the potential effects of the Phase 2 Extension project in which four distinct analyses were completed: 1) a regional burden analysis; 2) a localized carbon monoxide hot spot analysis for intersections; 3) a localized carbon monoxide analysis for park and ride (PNR) lots; and 4) a PM_{2.5} and PM₁₀ analysis of diesel bus idling. The SFEIS/SFEIR examined construction-related air pollutant emissions in a subsequent chapter of that document, which is discussed under Impact AQ-3 below. The burden analysis was conducted to estimate future air

quality impacts based on VMT. The SFEIS/SFEIR reported that implementation of the Phase 2 Extension project would lower daily VMT by 38,000 miles and would reduce all criteria pollutant emissions compared to conditions without the Phase 2 Extension project. Since the Phase 2 Extension project is defined as the No Project Alternative for this IS/EA and would enable a reduction in criteria pollutant emissions, the No Project Alternative would have a beneficial effect with respect to regional pollutant emissions.

The hot spot analyses were conducted at strategic locations (intersections, PNR lots, parking structures, and passenger loading zones), where the traffic-related effects of the project would be concentrated, resulting in a high potential for elevated levels of CO, PM₁₀, and PM_{2.5}. Results from each hot spot analysis indicated that the Phase 2 Extension project would not create localized air quality impacts that exceed federal and/or state standards. As such, the SFEIS/SFEIR determined that there would be no adverse effect as a result of the Phase 2 Extension project, which is defined as the No Project Alternative for this IS/EA. Under CEQA, the No Project Alternative would not violate any air quality standards and the impact would therefore be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously approved Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA.

As mentioned previously, the proposed modifications do not change the principal features of the previously approved project (i.e., number of railcars, track mileage, stations) that would most affect air emissions and air quality. The proposed modifications would also not change the beneficial reduction in automobile VMT that is predicted to result from implementation of the Phase 2 Extension project. Based on these facts, it can be concluded that the proposed modifications to the Phase 2 Extension project would not result in new adverse or significant air quality effects and would not require mitigation measures not already identified in the SFEIS/SFEIR.

With regard to the 400-foot tailtrack extension, the tailtracks would be integrated within the project and existing right-of-way. Since the addition of 400 feet of tailtrack is negligible when compared to the overall Phase 2 Extension project (less than two percent of the project total mileage), associated air quality impacts from the extension are also negligible.

The proposed modifications under this alternative would have a negligible effect on the emission of criteria air pollutants compared to the previously approved Phase 2 Extension project and would not contribute to a violation of air quality standards. As a result, Alternative 2 would not violate an air quality standard, and there would be no adverse effect with regards to violating an air quality standard. Under CEQA, the impact would be less than significant.

AQ-3. Create Significant Air Pollutant Emissions During Construction Activities

Alternative 1 – No Project. This alternative would result in construction of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. As indicated in the SFEIS/SFEIR, the Phase 2 Extension project would not result in construction-related air pollutant emissions above the state or federal thresholds. Furthermore, as indicated in Table 3.2-3 (reproduced from Table 5.2-2 of the SFEIS/SFEIR), the worst-case daily construction emissions scenario determined that all air pollutants of concern would be below the state and federal construction thresholds. The worst-case scenario assumes that track construction, station construction, grade separation, and bridge structure construction would occur concurrently, although separate project components are given as well.

Table 3.2-3
Worst-Case Daily Construction Emission – Phase 2 Extension Project
(pounds per day)

Construction Phase	CO	ROG	NO _x	SO _x	PM ₁₀
Light Rail Alignment	19.4	4.4	41.1	0.05	78.9
Stations/PNR Lots	16.7	3.8	34.3	0.04	86.0
Total Emissions (Worst Case Scenario)	36.1	8.2	75.4	0.09	164.9
SMAQMD Construction Threshold	n/a	n/a	85.0	n/a	n/a
Federal Threshold	550.0	140.0	140.0	550.0	550.0
Potential Threshold Exceedance?	No	No	No	No	No

Source: Air Quality Technical Report, Terry A. Hayes Associates LLC, 2007.

RT would be required to adhere to the best management practices outlined in the SFEIS/SFEIR. With these practices in place, the worst-case construction emissions would be reduced further below the threshold levels. Specifically, NO_x and PM₁₀ emissions would be reduced to 61.2 and 82.3 pounds per day, respectively, from the 75.4 and 164.0 pounds predicted under the worst-case scenario. With the exception of NO_x, after mitigation, construction-related air pollutant emissions would be less than 50 percent of their respective state and federal thresholds. After mitigation, NO_x emissions would be 38 percent lower than the state threshold and 56 percent lower than the federal threshold. Mitigation measures contained within the SFEIS/SFEIR required that standard RT dust control measures be implemented during project construction. These measures would be incorporated into the contractor bid specifications to further reduce construction-period air quality impacts.

Based on each of these considerations, the SFEIS/SFEIR determined that there would be no adverse effect from implementation of the Phase 2 Extension project with regards to construction-related air pollutant emissions. Under CEQA, the impact would be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. The construction activities required to implement this alternative would be essentially identical to those assessed in the SFEIS/SFEIR. The SFEIS/SFEIR found that short-term air pollutant emissions associated with development of LRT service to south Sacramento would occur as a result of site preparation, grading/excavation, construction workers traveling to and from construction sites, delivery and hauling of construction supplies and debris to and from construction sites, and fuel combustion by on-site construction equipment.

Alternative 2 includes the addition of 400 feet of tailtrack at the Phase 2 project terminus at Cosumnes River College. The air pollutant emissions associated with the tailtrack extension constitute less than two percent of the total NO_x emissions associated with the completion of the LRT alignment over the projected two-year construction timeline. The proposed tailtrack extension would add several days to the LRT alignment construction timeline, but construction activities and management practices would be the same as those assessed in the SFEIS/SFEIR. As a result, the air pollutant emissions generated by construction of the 400 feet of additional tailtrack would be negligible.

In addition, under Alternative 2, Design Option B, the PG&E pipeline relocation would be shortened by approximately 0.5 miles (more than 2,500 feet), reducing the overall amount of earthmoving construction activity required by the Phase 2 Extension project. The elimination of 2,500 feet of trenching and earthmoving that would result from this component of Alternative 2 would more than offset the additional earthmoving required to install the 400-foot tailtrack extension.

Implementation of Design Options A and C would eliminate the need to relocate the existing PG&E natural gas pipeline all together, since the LRT tracks under these two design options would be west of the pipeline alignment. This would eliminate over one mile of trenching, earthmoving, backfilling, and pavement replacement along Detroit Boulevard. Therefore, the emissions that would have been generated as a part of the pipeline relocation would be entirely avoided. This would serve to further offset other emissions associated with the project, such as the demolitions emissions associated with Design Option C and the tailtrack extension.

Design Option C for the realignment of the LRT tracks adjacent to the UPRR mainline tracks would involve the full take of 36 residential parcels to the west of the alignment. Demolition activities associated with this action would create additional emissions related to demolition equipment and dust associated with removal of the residences. Standard practice for demolition activities includes the application of water on structures as they are being torn down. This practice would reduce the propagation of dust associated with the demolition activities to levels considered acceptable by the SMAQMD.

Based on each of these considerations, the implementation of Alternative 2 would not create a substantial net increase in construction emissions beyond that already identified in the SFEIS/SFEIR. Furthermore, the SFEIS/SFEIR determined that the project's overall construction emissions would be less than 50 percent of that allowed under state and federal

standards. The SFEIS/SFEIR also identified a number of mitigation measures to minimize construction-related emissions during the construction phase. These measures (identified as Mitigation Measures CAQ-1 through CAQ-17 in the SFEIS/SFEIR) would also be applicable to all construction activities undertaken during the implementation of Alternative 2. Therefore, the implementation of Alternative 2 would not have an adverse effect with regards to construction-related air emissions. Under CEQA, construction-related air quality impacts would be less than significant.

Conformity Assessment

The CAA contains conformity provisions that help to ensure that federally-funded projects throughout the region do not produce more emissions than are allowed by the applicable air quality plans. Because RT may rely on the Federal Transit Administration (FTA) for partial funding of the proposed modifications to the Phase 2 Extension project, it must be demonstrated that the proposed project is in conformity with the federally-required air quality planning efforts of SMAQMD and SACOG. The determination of conformity is based on the following requirements: 1) come from a transportation plan and program that have been found to conform; and 2) not cause or contribute to any new localized pollutant violations or increase the frequency or severity of any existing violations.

According to Appendix D5, Air Quality Conformity Determination, of the Metropolitan Transportation Plan for 2035 (MTP), the 2035 MTP meets the emissions conformity tests as outlined in the Transportation Conformity requirements found in the CAA.^{5 and 6} Furthermore, the Phase 2 Extension project was included in the Final 2035 MTP list of projects on page 13 of Appendix A. In addition, analysis in the Phase 2 Extension project SFEIS/SFEIR determined that the project would not have adverse air quality impacts. The SFEIS/SFEIR's operational air quality analysis included a burden analysis, a CO hot spot analysis for intersections and park-and-ride lots, and a PM₁₀ analysis for bus idling. The SFEIS/SFEIR also reported that emissions from the project associated with construction would be well below the thresholds for CO, ROG, NO_x, SO_x, PM₁₀, and PM_{2.5} (see Table 3.2-3). Therefore, the Phase 2 Extension project (Alternative 1 in this IS/EA) is a conforming project and would be eligible for federal funding.

Likewise, Alternative 2 is a conforming project based on the analysis provided in this IS/EA. The proposed modifications under this alternative would not add additional train revenue miles, railcars, or stations to the South Line LRT system, beyond those that have already been assessed in the

⁵ Since the last MTP, California adopted Senate Bill 375, which requires a Sustainable Communities Strategy, similar to the Sacramento region's smart land use Blueprint project, to be added to transportation plans across the state. As part of the update, SACOG staff has developed three land use and transportation scenarios. Those scenarios, including their performance metrics, were shared with the public in nine public workshops held across the region in October 2010. SACOG will use public input received during the public workshops and guidance from the SACOG Board to develop a preferred draft scenario for the update of the MTP 2035. In the spring of 2011, SACOG will conduct additional public meetings for input on the draft preferred scenario. These public meetings will be followed by public hearings in advance of Board action anticipated to conclude in early 2012.

⁶ SACOG, *2035 MTP, Appendix D5: Air Quality Conformity Determination*. Website: <http://www.sacog.org/mtp/2035/final-mtp>, accessed on January 17, 2011.

SFEIS/SFEIR. Similar to Alternative 1, emissions from the implementation of Alternative 2 would be well below the thresholds for CO, ROG, NO_x, SO_x, PM₁₀, and PM_{2.5}. Any potential increases in construction emissions resulting from the implementation of Alternative 2 would be offset by other actions associated with the project's construction. Therefore, Alternative 2 is also a conforming project and would be eligible for federal funding.

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3.3 BIOLOGICAL RESOURCES

Introduction

This section describes the biological resources found in the project area and the potential impacts of project implementation on those resources. Biological resources include both common and special-status plant and wildlife species and their habitats, as well as wetlands and other waters that receive protection under various federal and state regulations. This section examines potential effects on biological resources that may not have been addressed in the previously adopted SFEIS/SFEIR for the Phase 2 Extension project.

Environmental Setting

An updated query of the California Department of Fish and Game's (CDFG) Natural Diversity Database (CNDDB) was conducted to determine if any new special-status plant or wildlife species have been recorded in the area since the preparation of the SFEIS/SFEIR in 2008. The updated CNDDB results found that the project areas for both Alternative 1, the No Project Alternative, and Alternative 2, the Modifications to the Phase 2 Extension Project Alternative, do not contain any special-status species with habitat that have not already been addressed in the previously approved SFEIS/SFEIR.

The larger South Sacramento Corridor Phase 2 Project was the subject of a Biological Opinion (BO) prepared by the U.S. Fish and Wildlife Service (USFWS) in 2008 during the SFEIS/SFEIR process (see Appendix B for a copy of the BO). The BO evaluated the project's effect on the Federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*) and the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) (collectively referred to as vernal pool crustaceans), the threatened giant garter snake (*Thamnophis gigas*), and the threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). The BO determined that the larger Phase 2 project would have limited impacts on vernal pool crustacean habitat in those portions of the larger 4.3-mile alignment that would pass through ephemeral wetlands located on the Sacramento Regional County Sanitation District (SRCSD) Bufferlands. Mitigation in the form of conservation and preservation of vernal pool habitat was prescribed for those impacts. The BO also determined that the larger Phase 2 project would also have limited impacts on giant garter snake at the proposed UPRR flyover at the confluence of Morrison and Union House Creeks. Mitigation was also prescribed to offset these impacts. Finally, the BO determined that the larger Phase 2 project would have no impacts upon the valley elderberry longhorn beetle since impacts to that species had already been addressed in a previously-prepared BO for the I-5/Cosumnes River Boulevard Interchange project within the SRCSD Bufferlands where the species would be most likely to occur.

A review of the abovementioned USFWS BO for the larger Phase 2 project found that none of the five project modification locations under consideration in Alternative 2 fall within the special-status habitat areas identified in the USFWS BO. To determine if additional threatened or endangered species beyond those considered in the SFEIS/SFEIR or the USFWS BO are likely to occur in the project area, an additional inquiry was made to the USFWS. . A review of the updated list provided by USFWS (see

Appendix B) found that the project areas for both Alternative 1, the No Project Alternative, and Alternative 2, the Modifications to the Phase 2 Extension Project Alternative, do not contain any listed species or habitats that have not already been addressed in the previously approved SFEIS/SFEIR or the USFWS BO. To verify these findings, an updated biological resources field survey was conducted at the five project modification locations under consideration in Alternative 2. This survey was conducted by a qualified project biologist in January 2011, the results of which are summarized below for each modification area.

LRT Tracks Adjacent to UPRR Mainline Tracks

The realignment of approximately 4,700 feet of the northernmost portion of the Phase 2 extension adjacent to the Union Pacific Railroad (UPRR) tracks would shift the proposed alignment to the west. This realignment would require acquisition of portions of the adjacent residential backyards to the west of the existing UPRR alignment. Habitat in this 4,700-foot stretch is a combination of residential development, non-native ornamental landscape plants, and ruderal grasses and forbs. As with most urban landscapes, residential development provides minimal native wildlife habitat and virtually no habitat for native plant communities. Only those species tolerant of urban environments such as scrub jay (*Aphelocoma coerulescens*), mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), house mouse (*Mus musculus*), black rat (*Rattus rattus*), and Norway rat (*Rattus norvegicus*) would regularly use this environment. Species that may make occasional use of residential areas would include raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), and coyote (*Canis latrans*). With the exception of potential for nesting migratory birds (including raptors), no habitat for special-status species occurs along any portion of the LRT alignment adjacent to the UPRR tracks, nor are any wetlands or other waters of the United States features present based on the January 2011 site reconnaissance.

PG&E Natural Gas Pipeline Relocation (Applicable to Design Option B Only)

As part of the previously adopted Phase 2 Extension project, the PG&E natural gas pipeline would be relocated within the Detroit Boulevard right-of-way along its entire length. Detroit Boulevard is a paved roadway with medium density single family residential development on either side. Approximately midway along Detroit Boulevard, the relocated pipeline would reconnect with an existing natural gas pipeline to the east via a utility corridor that is occupied by high-tension electrical lines. This corridor consists of a narrow alley passing between the backyards of several residential dwellings to the north and south. The corridor is interrupted where residents have incorporated remnant parcels into their yards by installing fences. Vegetation along this easement consists primarily of sparse, weedy non-native grasses and forbs with some intrusion from landscape plants on the adjacent properties. There are no wetlands or other waters of the United States features present within the area.

Because the setting is comparable to that along the UPRR tracks described above, it is highly unlikely that any special-status plants would occur in this area, and only urban-tolerant wildlife species such as those described above would be present in this area.

Morrison Creek Levee Setback

The proposed modifications to the RT right-of-way (ROW) around Morrison Creek would increase the distance between the RT ROW and the Morrison Creek levee by shifting the alignment to the west, away from the levee. Habitat along the realigned stretch includes fallow agricultural fields and non-native annual grassland. This area would represent potential foraging habitat for raptors and other migratory birds as well as other common local wildlife species. No wetlands are present in this area based on the January 2011 site reconnaissance.

TPPS #10 Relocation

Under this proposed modification, TPSS #10 would be relocated to the IJAZ property on the east side of Franklin Boulevard. The IJAZ property is currently a vacant, flat lot, largely barren of vegetation, with only small patches of non-native ruderal grasses present. This lot is also isolated by Franklin Boulevard from disturbed grasslands to the west, with residential development to the north and south. Based on the January 2011 site visit by a project biologist, no trees or shrubs that would provide nesting habitat for migratory birds are present, and there are no wetlands at the site. Due to the sparse vegetative cover and regular disturbance by vehicles, the property is not likely to support a substantial insect or rodent population and would therefore provide poor foraging habitat for raptors and other local wildlife.

Tailtrack Extension at Cosumnes River College

This modification involves the southern extension of the tailtracks at the project's southern terminus. No wetlands or potential habitat for special-status plant or wildlife species are present at this location, because it lies along the eastern edge of a recently constructed parking lot, and is bordered on the south and east side by a tall, earthen, grass-covered berm (mowed lawn grasses) that serves to enclose the parking lot.

Applicable Policies and Regulations

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, (16 U.S.C. 1531-1543) provides a means to conserve the ecosystems upon which endangered species and threatened species depend. It also provides a program for the conservation of such endangered and threatened species. Section 7 of the Act requires each federal agency, in consultation with and with the assistance of the USFWS, to ensure that actions authorized, funded, or carried out by the agency do not jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of habitat of such species, unless the agency has been granted an exemption for the proposed action. In situations where listed species have the potential to be impacted, or where USFWS-designated critical habitat for a listed species is present, formal consultation with the USFWS is usually carried out via the preparation of a Biological Opinion (BO) by the USFWS, wherein the USFWS discloses likely impacts to listed species or their habitats, and prescribes mitigation to offset those impacts.

Section 10 of the Act relates to non-federal actions that could result in incidental "take" of listed species. A habitat conservation plan or "HCP" must accompany an application for an incidental take permit. The

purpose of the habitat conservation planning process is to ensure there is adequate minimizing and mitigating of the effects of the authorized incidental take. The purpose of the incidental take permit is to authorize the incidental take of a listed species, not to authorize the activities that result in take.

A number of governmental jurisdictions in the Sacramento area are currently collaborating on the preparation of a multiple species HCP that would be specific to non-federal activities in the southern portion of Sacramento County. The South Sacramento HCP has been under development for a number of years but has yet to be fully implemented. The Phase 2 Extension project alignment is located just outside of the proposed HCP boundaries. Therefore, there are no HCPs or other regional conservation plans that are applicable to the Phase 2 project area.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act establishes a federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird."

Section 404 of the Clean Water Act

The U.S. Army Corps of Engineers (USACE) has jurisdiction over wetlands and other waters of the United States, through Section 404 of the Clean Water Act. Hydrophytic vegetation, wetland hydrology and hydric soils all must be present to qualify a site as a jurisdictional wetland as defined in Section 404. The USACE requires that: 1) impacts to wetlands be avoided; 2) unavoidable impacts be minimized to the maximum extent practicable; and 3) when unavoidable, impacts be mitigated to achieve no-net-loss of wetland functions and values.

Executive Order 11990 – Protection of Wetlands

Executive Order 11990 requires that federal agencies implement the following procedures for any federal action that involves wetlands: 1) provide an opportunity for early public involvement; 2) consider alternatives that would avoid wetlands, and if avoidance is not possible, measures to minimize harm to wetlands must be included in the action; and 3) prepare a "Wetlands Only Practicable Alternative Finding" for actions that require an EIS.

USDOT Order 5660.1A – Preservation of the Nation's Wetlands

The U.S. Department of Transportation (USDOT) Order 5660.1A sets forth USDOT policy for interpreting Executive Order 11990, Protection of Wetlands, as described above. It requires that transportation facilities be planned, constructed and operated to assure protection, preservation, and enhancement of the nation's wetlands to the fullest extent practicable, and it establishes procedures for implementation of the policy.

California Streambed Alteration Agreement

The California Department of Fish and Game (CDFG) focuses on minimizing and otherwise mitigating adverse effects on wetland communities that provide wildlife habitat through Section 1600, et seq., of the State Fish and Game Code (Streambed Alteration Agreement). All USACE wetlands are CDFG wetlands; however, CDFG wetlands also include habitat with hydrophytic vegetation regardless of whether the habitat meets the hydrology or hydric soils criteria.

Fully Protected Species

The California Fish and Game Code provides protections from take for a variety of species. Certain species are considered fully protected. Fully protected species or parts thereof may not be taken or possessed at any time, except as provided in Section 2081.7 of the Fish and Game Code. No provision of the Fish and Game Code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species, and no permits or licenses heretofore issued shall have any force or effect for that purpose. However, the department may authorize the taking of those species for necessary scientific research, including efforts to recover fully protected, threatened, or endangered species. Lists of the fully protected species are provided in Sections 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes) of the Fish and Game Code.

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code, Section 2050, et seq.) declares that it is the policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat. It requires state lead agencies to adopt reasonable and prudent alternatives or modifications to a project when the CDFG finds that the project would jeopardize the continued existence of such species or result in the destruction or adverse modification of habitat essential to the continued existence of such species.

California Species of Special Concern

California Species of Special Concern (CSC) status applies to animals not listed under the FESA or CESA, but which nonetheless are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CSC species share one or more of the following criteria:

- Occur in small, isolated populations or in fragmented habitat, and are threatened by further isolation and population reduction;
- Show marked population declines. Species that show a marked population decline, yet are still abundant, do not meet the CSC definition, whereas marked population decline in uncommon or rare species is an inclusion criterion;
- Depend on a habitat that has shown substantial historical or recent declines in size. This criterion infers the population viability of a species based on trends in the habitats upon which it specializes. Species that specialize in these habitats generally meet the criteria for Threatened or Endangered status or CSC status;

- Occur only in or adjacent to an area where habitat is being converted to land uses incompatible with the animal's survival;
- Have few California records, or which historically occurred here but for which there are no recent records; and
- Occur largely on public lands, but where current management practices are inconsistent with the animal's persistence.

The CSC designation is intended to result in special consideration for these species by CDFG, land managers, and others, and is intended to focus attention on the species to help avert the need for listing under federal and State endangered species laws and recovery efforts that might ultimately be required. The CSC designation does not provide specific legal protection, but signifies that these species are recognized as vulnerable by CDFG.

California Native Plant Society

The California Native Plant Society (CNPS) is a statewide resource conservation organization that has developed an inventory of California's special-status plant species. This inventory is a summary of information on the distribution, rarity, and endangerment of California's vascular plants. This rare plant inventory consists of four lists. CNPS presumes that List 1A plant species are extinct in California because they have not been seen in the wild for many years. CNPS considers List 1B plants as rare, threatened, or endangered throughout their range. List 2 plant species are considered rare, threatened, or endangered in California, but more common in other states. Plant species on lists 1A, 1B, and 2 meet CDFG criteria for endangered, threatened, or rare listing. Plant species for which CNPS requires additional information in order to properly evaluate their status are included on List 3. List 4 plant species are those of limited distribution in California whose susceptibility to threat is considered low at the current time.

The CNPS listing is a guideline for lead agencies to assist in identification of plant species that are rare in California. The goal is to establish awareness of native plants and to take action to avoid or reduce impacts to plants on the list.

California Native Plant Protection Act

The California Native Plant Protection Act, (Fish and Game Code 1900-1913) requires all state agencies to utilize their authority to carry out programs to conserve endangered and rare native plants.

City of Sacramento Heritage Tree Ordinance

The City of Sacramento Municipal Code (Title 12, Chapter 12.64) defines a "heritage tree" as:

- Any tree of any species with a trunk circumference of 100 inches [32-inch diameter at breast height (DBH)] or more, which is of good quality in terms of health, vigor of growth and conformity to generally accepted horticultural standards of shape and location for its species;
- Any native *Quercus* species (oak), *Aesculus californica* (California buckeye), or *Platanus racemosa* (California sycamore), having a circumference of 36 inches (11.5-inch DBH) or greater

when a single trunk, or a cumulative circumference of 36 inches (11.5-inch DBH) or greater when a multi-trunk;

- Any tree 36 inches (11.5-inch DBH) in circumference or greater in a riparian zone. The riparian zone is measured from the center line of the water course to 30 feet beyond the high water line; or
- Any tree, grove of trees or woodland trees designated by resolution of the city council to be of special historical or environmental value or of significant community benefit (Prior code Section 45.04.211).

CEQA Guidelines

Section 15380 of the California Environmental Quality Act (CEQA) Guidelines, identifies impacts to California species of special concern (CSC) and California Native Plant Society (CNPS) lists 1B and 2 species as significant if a proposed project would result in one of the following: a) direct mortality; b) permanent loss of existing habitat; c) temporary loss of habitat that may result in increased mortality or lowered reproductive success; or d) avoidance of biologically important habitat for substantial periods that increases mortality or causes lower reproductive success.

Impact Assessment and Mitigation Measures

Standards of Significance

The project alternatives would have a significant adverse effect on biological resources if they:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Environmental Analysis

BIO-1. Affect Special-Status Species

Alternative 1 – No Project. The No Project Alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. Analysis contained in Section 4.4 of the SFEIS/SFEIR determined that while the Phase 2 extension would result in impacts to special-status plant and wildlife species and wetlands along the larger Phase 2 project corridor, those impacts could be mitigated to levels that would not conflict with applicable federal laws and regulations relating to special status species. Appropriate mitigation measures were accordingly adopted as part of the SFEIS/SFEIR. Similarly, the SFEIS/SFEIR reported that impacts under CEQA would be less than significant with implementation of recommended mitigation measures.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously approved Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. The proposed modifications would not significantly alter the overall footprint of the Phase 2 Extension previously analyzed in the SFEIS/SFEIR, with the exception of Design Option C for the realignment of the LRT tracks adjacent to the UPRR corridor. However, that design option would affect residential backyards and residences west of the UPRR corridor, and those areas consist entirely of ruderal, non-native habitats and ornamental landscaping plants. These types of habitats do not contain the primary characteristics that are required for special status species, so that the realignment of the tracks in this area would not result in additional impacts to sensitive species that were not already assessed in the SFEIS/SFEIR.

The updated biological resources assessment conducted for this IS/EA found that the existing conditions described in the SFEIS/SFEIR have not changed. The SFEIS/SFEIR reported that the Phase 2 Extension project would result in impacts to special status plant and wildlife species along certain portions of the Phase 2 corridor. These impacts were evaluated in the USFWS BO, described previously in the Environmental Setting discussion of this section. However, the SFEIS/SFEIR and the USFWS BO delineated those special status species locations within the larger Phase 2 corridor, and none of those locations are affected by the proposed modifications under Alternative 2. Each of the listed species impact areas described in the USFWS BO are outside of the areas under consideration for Alternative 2. None of the five modification locations are located within the SRCSD Bufferlands, where vernal pool crustaceans and valley elderberry longhorn beetle would be likely to occur, and none of the modification locations are located near the Morrison Creek/Union House Creek confluence, where giant garter snake would be likely to occur. Accordingly, there would be no impact to these species or their habitats as a result of implementation of Alternative 2. Further, the updated biological field assessment confirmed that there is no suitable habitat for any additional special status species at any of the five modification locations. Therefore, the implementation of Alternative 2 would not affect any special status species. Alternative 2 would therefore not conflict with applicable federal laws and regulations relating to special status species. Similarly, the impact under CEQA would be less than significant.

BIO-2. Affect Sensitive Habitats

Alternative 1 – No Project. The No Project Alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. Analysis contained in Section 4.4 of the SFEIS/SFEIR determined that while the Phase 2 Extension project would result in impacts to sensitive habitats along portions of the larger Phase 2 project corridor, those impacts could be mitigated to levels that would not conflict with applicable federal laws and regulations relating to sensitive habitats. Appropriate mitigation measures were accordingly adopted as part of the SFEIS/SFEIR. Similarly, the SFEIS/SFEIR reported that impacts under CEQA would be less than significant, as mitigated.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously approved Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. The updated biological resources assessment conducted for this IS/EA found that there are no sensitive habitats present at any of the locations proposed for modification under Alternative 2. The proposed modifications would not significantly alter the overall footprint of the Phase 2 Extension project previously analyzed in the SFEIS/SFEIR, with the exception of Design Option C for the realignment of the LRT tracks adjacent to the UPRR corridor. However, that design option would affect residential backyards and residences west of the UPRR corridor, and those areas consist entirely of ruderal, non-native habitats and ornamental landscaping plants. As such, the realignment of the tracks in this area would not result in additional impacts to sensitive habitats that were not already assessed in the SFEIS/SFEIR. Since there are no sensitive habitats present at any of the five modification locations under consideration for Alternative 2, the implementation of the alternative would not conflict with applicable federal laws and regulations relating to sensitive habitats. Similarly, the impact under CEQA would be less than significant.

BIO-3. Affect Protected Wetlands and Other Waters

Alternative 1 – No Project. The No Project Alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. Analysis contained in Section 4.4 of the SFEIS/SFEIR determined that while the Phase 2 Extension project would result in impacts on wetlands and waters of the U.S. along the larger Phase 2 project corridor, those impacts could be mitigated to levels that would not conflict with applicable federal laws and regulations relating to wetlands and other waters. Appropriate mitigation measures were accordingly adopted as part of the SFEIS/SFEIR. Similarly, the SFEIS/SFEIR reported that impacts under CEQA would be less than significant, as mitigated.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously approved Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. The proposed modifications would not significantly alter the overall footprint of the Phase 2 extension previously analyzed in the SFEIS/SFEIR. The SFEIS/SFEIR reported that the Phase 2 Extension project would result in impacts to wetlands and jurisdictional waters along certain portions of the Phase 2 corridor. However, the SFEIS/SFEIR delineated those wetlands and jurisdictional areas within the larger Phase 2 corridor, and none of

those locations coincide with the locations under consideration for modification under Alternative 2. Further, the updated biological field assessment confirmed that there are no wetlands or jurisdictional waters at any of the five modification locations. Therefore, the implementation of Alternative 2 would not affect these resources, nor would it conflict with applicable federal laws and regulations relating to wetlands and other waters. Similarly, the impact under CEQA would be less than significant.

BIO-4. Interrupt Wildlife Movement and Nesting

Alternative 1 – No Project. The No Project Alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. Analysis contained in Section 4.4 of the SFEIS/SFEIR determined that while the Phase 2 extension would result in potential interruptions to wildlife movement and nesting along portions of the Phase 2 corridor, those impacts could be mitigated to levels that would not conflict with applicable federal laws and regulations relating to wildlife movement and nesting. Appropriate mitigation measures were accordingly adopted as part of the SFEIS/SFEIR. Similarly, the SFEIS/SFEIR reported that impacts under CEQA would be less than significant, as mitigated.

Alternative 2 – Modifications to the Phase 2 Extension Project. The proposed modifications would not significantly alter the overall footprint of the Phase 2 Extension project previously analyzed in the SFEIS/SFEIR. The updated biological resources assessment conducted for this IS/EA found that there are no trees or other nesting bird habitat features at any of the locations proposed for modification under Alternative 2, with the exception of Design Option C for the realignment of the LRT tracks adjacent to the UPRR corridor. In this portion of the alignment, a number of large trees and shrubs are present in the backyards of some of the residences. These features could contain nesting birds during nesting season, and those nests and birds could be disturbed if construction were to occur during the nesting season.

Mitigation requiring these surveys during nesting season, as well as subsequent avoidance measures to be implemented if nesting birds are found, was included in the SFEIS/SFEIR (Mitigation Measures CB-34 through CB-38). Implementation of the same mitigation standards as those prescribed in the SFEIS/SFEIR would mitigate the impacts associated with Alternative 2. The SFEIS/SFEIR reported that while the Phase 2 extension could result in impacts to nesting birds along the larger Phase 2 Extension project alignment, those impacts could be mitigated to levels that would not conflict with applicable federal laws and regulations relating to wildlife movement and nesting. Similarly, the SFEIS/SFEIR reported that impacts under CEQA would be less than significant, as mitigated.

BIO-5. Conflict with Local Tree Ordinances

Alternative 1 – No Project. The Sacramento Heritage Tree Ordinance is a local regulation that has no applicable federal equivalent. As such, the analysis for this topic relates to CEQA only. The No Project Alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. Analysis contained in Section 4.4 of the SFEIS/SFEIR determined that while the Phase 2 Extension project would result in the loss of trees protected under the City of Sacramento Heritage Tree Ordinance, those impacts could be

mitigated to levels that would be less than significant under CEQA. Appropriate mitigation measures were accordingly adopted as part of the SFEIS/SFEIR.

Alternative 2 – Modifications to the Phase 2 Extension Project. The Sacramento Heritage Tree Ordinance is a local regulation that has no applicable federal equivalent. As such, the analysis for this topic relates to CEQA only. The proposed modifications would not significantly alter the overall footprint of the Phase 2 extension previously analyzed in the SFEIS/SFEIR, with the exception of Design Option C for the realignment of the LRT tracks adjacent to the UPRR corridor. In this area, a number of large trees and shrubs are present in the backyards of some of the residences that could qualify for consideration under the City of Sacramento Heritage Tree Ordinance. However, the SFEIS/SFEIR included mitigation (Mitigation Measure B-7) to protect against potential impacts to heritage trees, including the employment of a certified arborist to survey the alignment to determine the presence or absence of heritage trees within the project footprint. The measure also provided specific actions that would be required to be taken if heritage trees were found along the alignment, including compensation for loss of heritage trees through replacement or the payment of fees. Implementation of the same mitigation measures as those prescribed in the SFEIS/SFEIR would mitigate the impacts associated with Alternative 2. The SFEIS/SFEIR reported that while the Phase 2 Extension project could result in impacts to heritage trees along the project alignment, those impacts could be mitigated to levels that would be less than significant under CEQA, as mitigated.

BIO-6. Conflict with Regional Conservation Plans

Alternative 1 – No Project. The No Project Alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. Analysis contained in Section 4.4 of the SFEIS/SFEIR determined that the Phase 2 Extension project would not result in conflicts with regional conservation plans, since there are no applicable regional conservation plans in place along any portion of the Phase 2 corridor. The Phase 2 Extension project alignment is located outside of the planning area of the South Sacramento Habitat Conservation Plan. Therefore, implementation of Alternative 1 would not conflict with applicable federal laws and regulations relating to regional conservation plans. Likewise, the project would have no impact in this regard under CEQA.

Alternative 2 – Modifications to the Phase 2 Extension Project. The proposed modifications would not significantly alter the overall footprint of the Phase 2 Extension project previously analyzed in the SFEIS/SFEIR. The SFEIS/SFEIR determined that the Phase 2 extension would not result in conflicts with regional conservation plans, since there are no applicable regional conservation plans in place along any portion of the Phase 2 project corridor. That situation has not changed. Therefore, Alternative 2 would not conflict with applicable federal laws and regulations relating to regional conservation plans. Likewise, the project would have no impact in this regard under CEQA.

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3.4 CLIMATE CHANGE

Introduction

Global climate change refers to the process by which the chemical composition of the atmosphere is altered through the buildup of greenhouse gases (GHGs), primarily from the combustion of fossil fuels. GHGs allow the sun's radiation to penetrate the atmosphere and warm the Earth's surface, but do not let the infrared radiation emitted from the Earth escape back into space. As a result, global temperatures are predicted to increase over the next century.

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to GHG emissions reduction and climate change research and policy have increased dramatically in recent years. The IPCC has developed a set of possible future GHG scenarios based on different assumptions about global development. Based on recent analysis of these scenarios, California is expected to experience a temperature increase within the range of 1.7 to 5.8 degrees Celsius over the next 100 years. Based on the IPCC's recommendations, policy efforts are primarily concerned with the emissions of GHG related to human activity that include carbon dioxide (CO₂), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (tetrafluoroethane), and HFC-152a (difluoroethane). Although climate change is inherently a cumulative issue, meaningful reductions in GHG emissions can be accomplished at the individual project level.

Environmental Setting

According to the Master Environmental Impact Report for the Sacramento 2030 General Plan, even the smallest rise in average temperature would affect the Sacramento region. Sacramento would be particularly susceptible to climate change effects on water resources, such as decreases in the Sierra Mountains snowpack, which would have negative effects to water supply and the ability to generate hydroelectric power. Other potential effects include the intrusion of salt water from sea level rise into the Sacramento-San Joaquin Delta, with associated impacts on water supply. Other impacts, such as flooding and extreme heat events could also occur.¹

Both the City and County of Sacramento are currently conducting an inventory of all GHG emissions in their respective jurisdictions. The final results of these studies were not available at the time of the drafting of this IS/EA. However, preliminary data concerning the City's GHG emissions indicate that vehicular emissions make up the largest percentage (approximately 43 percent) of GHG emissions in the City. Other principal GHG emissions sources include commercial and industrial uses (22 percent),

¹ City of Sacramento Community Development Planning, *2030 General Plan: Master Environmental Impact Report Part 2*. Website: http://www.sacgp.org/documents/04_Part2.01_LandUseandUrbanDesign.pdf, accessed on January 18, 2011.

residential uses (17 percent), agriculture (10 percent), and landfill gas emissions (9 percent). The bulk of the non-vehicular GHG emissions for residences, industry, and commercial uses derive from the production of electric power to support those uses.²

Applicable Policies and Regulations

In 2002, with the passage of Assembly Bill (AB) 1493, California launched a proactive approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the California Air Resources Board (CARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. California is expected to enforce these standards through 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The state is expected to start developing new standards for the post-2016 model years later in 2011.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The stated goal of this Executive Order was to reduce California's GHG emissions to: 1) 2000 levels by 2010; 2) 1990 levels by 2020; and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 (October 18, 2006) further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07 (January 18, 2007), Governor Schwarzenegger established the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

In 2008 the state legislature passed California's Sustainable Communities and Climate Protection Act (SB 375), which was the nation's first legislation to link transportation and land use planning with global warming. SB 375 is intended to enhance the state's ability to reach the goals set forth by AB 32 through the promotion of efficient and sustainable land use planning. SB 375 requires CARB to develop regional greenhouse gas emission reduction targets for passenger vehicles. At the local level, each of the state's 18 metropolitan planning organizations (MPOs) are required to prepare a "sustainable communities strategy (SCS)" that demonstrates how the regions will meet their GHG reduction target through integrated land use, housing, and transportation planning.³ For Sacramento, the Sacramento Area Council of Governments (SACOG) is the region's MPO. SACOG recently completed its Metropolitan Transportation Plan for 2035 (2035 MTP), which is the organization's regional transportation plan. The SCS that is required by SACOG pursuant to SB375 will be

² City of Sacramento Climate Action Plan, *California Energy Commission Energy Aware Planning Guide Workshop*, February 18, 2010. Website: http://www.energy.ca.gov/energy_aware_guide/meetings/2010-02-18_workshop/presentations/Panel/3-Erik-de-Kok--City_of_Sacramento_Climate_Action_Plan.pdf, accessed January 19, 2011.

³ CARB, *Senate Bill 375 – Regional Targets*. Website: <http://www.arb.ca.gov/cc/sb375/sb375.htm>, accessed on January 18, 2011.

incorporated into the next MTP for the Sacramento region.⁴ However, the 2035 MTP was based upon the Preferred Blueprint Scenario which serves as the basis for the land use on which transportation investments will be made. As a precursor to the SCS, the Preferred Blueprint Scenario is a vision for growth that promotes compact, mixed-use development and more transit choices as an alternative to low density development. SACOG was the first MPO to link land use and transportation planning, and MTP 2035 and the Preferred Blueprint Scenario was the model for SB 375.

On December 7, 2009, the U.S. Environmental Protection Agency (EPA) Administrator signed two distinct findings regarding greenhouse gases under Section 202(a) of the Clean Air Act:

1. Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases – carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) – in the atmosphere threaten the public health and welfare of current and future generations.
2. Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.⁵

According to the Association of Environmental Professionals (AEP),⁶ an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (see CEQA Guidelines Sections 15064(i)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. AEP's recommendations stated that gathering sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

In 2009, the Sacramento Metropolitan Air Quality Management District (SMAQMD) updated its CEQA Guide to Air Quality Assessment including recommendations for addressing GHG emissions in

⁴ SACOG, *What Senate Bill 375 Means for SACOG*. Website: http://www.sacog.org/about/advocacy/pdf/fact-sheets/FactSheet_SB375.pdf, accessed on January 18, 2011.

⁵ <http://www.epa.gov/climatechange/endangerment.html>

⁶ AEP, *How to Analyze GHG Emissions and Global Climate Change in CEQA Documents*. March 5, 2007.

CEQA review.⁷ SMAQMD recognizes that for most projects there is no simple metric available to determine if a single project would substantially increase or decrease overall GHG emission levels. Therefore, SMAQMD recommends that thresholds of significance for GHG emissions should be related to AB 32's GHG reduction goals.

The City of Sacramento is currently in the process of creating a Climate Action Plan that will help guide future plans, policies, and regulations toward the objective of lowering the City's overall GHG emissions. The City's Climate Action Plan Phase 1 document identifies the transportation sector as the leading contributor of GHG emissions, making up 43 percent of the City's total.⁸ In addition, the City of Sacramento's 2030 General Plan identifies the need to support statewide and regional efforts to reduce GHG emissions and fund transportation improvements as a priority under Goal LU 1.2.⁹ Furthermore, Appendix K of the Master Environmental Impact Report for the 2030 Sacramento General Plan includes policies focused on increasing the availability of light rail transit (LRT) service. Policy M 3.1.13: Light Rail Extension to Airport and South Sacramento states, "The City shall support the extension of light rail service to Sacramento International Airport and further extension in South Sacramento."

Impact Assessment and Mitigation Measures

Standards of Significance

Neither the EPA nor the Federal Transit Administration (FTA) has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. At this time, the analysis of greenhouse gas emissions and climate change is a requirement that is specific to California; there is no equivalent federal regulatory requirement. As such, the analysis for this topic relates to CEQA only. For the purposes of this analysis, the criteria for evaluating the proposed project's impact on GHG emissions is based on Appendix G of the 2010 CEQA Guidelines. Based on those Guidelines, the project alternatives would have a significant adverse effect on climate change if they:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

⁷ SMAQMD, *CEQA Guide to Air Quality Assessment, Chapter 6: Greenhouse Gas Emissions*. Website: <http://www.airquality.org/ceqa/cequguideupdate/Ch6ghgFINAL.pdf>, accessed on January 17, 2011.

⁸ City of Sacramento, Community Development Department Long Range Planning, *Climate Action Plan Phase 1: Internal Operations*, February 2010, website: http://www.sacgp.org/documents/Phase-1-CAP_2-11-10.pdf, accessed: December 21, 2010.

⁹ City of Sacramento Planning Department, *Sacramento 2030 General Plan: Land Use and Urban Design*, adopted March 3, 2009. Website: http://www.sacgp.org/documents/04_Part2.01_LandUseandUrbanDesign.pdf, accessed on January 18, 2011.

Environmental Analysis

CC-1. Generate Significant Greenhouse Gas Emissions

Alternative 1 – No Project. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. Although the purpose of this IS/EA document is to focus analysis on the proposed modifications and not the Phase 2 Extension project itself, it is important to note that the SFEIS/SFEIR reported that the Phase 2 Extension project (with or without the proposed modifications) would result in a reduction of approximately 4,168,000 vehicle miles traveled (VMT) per year by 2030 over conditions that would prevail if the project were not constructed at all. The removal of these vehicle miles from the roadway system would directly reduce regional GHG emissions. For example, implementation of the Phase 2 project would reduce carbon dioxide emissions by approximately 772.6 tons per year. The Phase 2 project would also reduce methane and nitrous oxide emissions. Overall, the Phase 2 project would reduce regional vehicle miles traveled and the associated GHG emissions resulting in a net benefit for these emissions. Accordingly, the SFEIS/SFEIR determined that GHG emissions would decrease with implementation of the Phase 2 project and that the effect of the project with regards to GHG emissions would be beneficial under CEQA.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously approved Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. The potential impact to GHG emissions associated with the proposed modification to the Phase 2 Extension project is evaluated below both in terms of long-term operational emissions and short-term, temporary construction-period emissions.

Operational Emissions. As stated previously in Section 3.2 of this IS/EA, the proposed modifications would not add mileage, railcars, or stations to the Phase 2 Extension project. As a result, the operation of the Phase 2 Extension project would be essentially the same under both Alternatives 1 and 2. As described above under Alternative 1, implementation and operation of the Phase 2 Extension project would result in net beneficial effects associated with GHG emissions in the vicinity of the proposed project and in the Sacramento region at large through reduction of VMT. The proposed modifications would not change the beneficial effects associated with operation of the Phase 2 Extension project. Therefore, Alternative 2 would result in a net beneficial effect to operational GHG emissions under CEQA.

Construction Emissions. Construction GHG emissions include emissions produced as a result of materials processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through the use of low emission equipment and by implementing better traffic management during construction phases. The proposed modifications to the Phase 2 Extension project do not introduce the need for new construction activities outside of those previously assessed in the SFEIS/SFEIR, with the exception of three items: 1) the demolition of 36 residences west

of the LRT tracks along the Union Pacific Railroad (UPRR) mainline tracks (applicable to Design Option C only); 2) realignment of the RT tracks in the vicinity of the Morrison Creek levee; and 3) the addition of 400 feet of tailtrack to the project terminus at Cosumnes River College.

Although Alternative 2 would introduce new construction activities associated with the UPRR and Morrison Creek Levee track realignments and the 400-foot tailtrack extension, the construction activities associated with these changes would be negligible when compared to the Phase 2 Extension project in its entirety. Furthermore, under Design Option B of this alternative, the length of the PG&E pipeline relocation along Detroit Boulevard would be reduced by between 0.5 mile or one mile, and could be eliminated altogether if Design Options A or C are selected for the realignment of the LRT tracks adjacent to the UPRR corridor is selected. A reduction in the length of the required PG&E pipeline relocation would have a beneficial effect on GHG emissions, regardless of the design option chosen, because of the reduced intensity and duration of construction. This reduction would serve to offset the GHG emissions created by the above mentioned construction activities. In addition, the emissions associated with the additional construction activities would be further offset by the substantial reduction in GHG emissions during the operational phase of the Phase 2 project.

Based on each of these considerations, the implementation of Alternative 2 would have a beneficial effect on reductions of GHG emissions under CEQA.

CC-2. Conflict with Applicable Greenhouse Gas Reduction Plans, Policies and Regulations

Alternative 1 – No Project. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. The SFEIS/SFEIR reported that the Phase 2 Extension project would expand LRT service to South Sacramento thereby supporting the GHG reduction goals set forth by federal, state, and local governments including the City’s 2030 General Plan and other policy documents described in this IS/EA. As documented in the City of Sacramento’s Climate Action Plan Phase 1 and state level policies such as AB 1493 and AB 32, light trucks and automobiles are responsible for a substantial amount of total GHG emissions. Since implementation of the Phase 2 project would lessen the amount of vehicle miles traveled, the project would therefore result in a beneficial reduction in GHG emissions.

The Phase 2 Extension project was included in the MTP 2035. The MTP 2035 program-level EIR found that CO₂ emissions reductions meet or exceed the projected savings targets for 2020 as set forth in AB 32. Even though there is an increase over existing conditions, because the emissions meet or exceed the projected savings targets for 2020, the impact of the MTP 2035 was found to be less than significant. In addition, the expected GHG reduction targets required by SB 375 that will be incorporated into the Sacramento area’s next MTP will focus on the development of public transit systems to link communities and minimize the need for automobile use. Therefore, the Phase 2 Extension project would be in accord with state and local efforts to reduce GHG emissions associated with light truck and automobile VMT.

Further, the SFEIS/SFEIR found that implementation of the Phase 2 project would support GHG reduction goals by providing an alternative mode of transportation to South Sacramento and reducing the area's reliance on automobiles and would have a beneficial effect on Sacramento's ability to meet relevant GHG reduction plans, policies, and regulations. As such, implementation of the Phase 2 project would have a beneficial effect on furthering GHG reduction plans, policies, and regulations under CEQA.

Alternative 2 – Modifications to the Phase 2 Extension Project. The proposed modifications identified under this alternative would create negligible additional track mileage (approximately 400 additional feet, or less than two percent of the entire Phase 2 project), and would add no additional railcars or stations. The beneficial effects (reduction in VMT, etc.) described above under Alternative 1 would also be realized under Alternative 2. As mentioned above, the proposed modifications to the Phase 2 Extension project would not change the operational GHG emissions associated with the project approved in 2008 and would have only minor construction-related effects. As such, implementation of the Phase 2 project would have a beneficial effect in terms of supporting GHG plans, policies, and regulations under CEQA.

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3.5 CULTURAL RESOURCES

Introduction

This section provides an assessment of the cultural resources located in the vicinity of the five proposed modifications described in Section 2, Project Alternatives, of this IS/EA. A detailed discussion of the existing conditions with respect to cultural resources can be found in Section 4.5, Historic and Cultural Resources, of the previously adopted 2008 SFEIS/SFEIR. Since the proposed project would receive federal funding, compliance with Section 106 of the National Historic Preservation Act (NHPA) is required.

In accordance with the NHPA, an Area of Potential Effect (APE) was delineated around the project sites to encompass potential direct and indirect effects on cultural resources that might occur from project implementation. An APE for the Phase 2 Extension project was originally delineated with the State Historic Preservation Office (SHPO) approval in 2003. A description of that APE is provided in the 2008 SFEIS/SFEIR and in Appendix C of this IS/EA as well. Some revisions to the 2003 APE have been proposed to SHPO to address the modifications being examined in this IS/EA and include:

- Under Alternative 2, Design Option C, both the archaeological and the architectural APEs have been shifted 100 feet southwards in the vicinity of the UPRR tracks.
- Under Alternative 2, the archaeological APE has been shifted 50 feet to the southwest in the vicinity of the Morrison Creek levee. Changes to the architectural APE for this project component are not required.
- Under Alternative 2, the entire IJAZ parcel has now been included within the archaeological APE to accommodate the relocation of TPSS #10. Changes to the architectural APE for this component are not required.

The process for finalizing the updated APEs is currently in progress. The associated correspondence and APE revisions are presented in Appendix C of this IS/EA.

Data for this section were taken from various sources, including an updated search of the Native American Heritage Commission Sacred Lands File (SLF) database; an updated records search of the California Historical Resources Information System (CHRIS) North-Central Information Center (NCIS); the 2008 SFEIS/SFEIR; an updated records search in 2009 for a CEQA addendum and a NEPA re-evaluation for Phase 2 Extension project modifications; and various technical reports addressing the proposed modification locations. These resources were reviewed to determine the presence or absence of cultural resources within the 2008 SFEIS/SFEIR APE and the updated APEs. These documents were also reviewed to determine if impacts to cultural resources would occur as a result of project implementation.

Environmental Setting

The project area is located in an urban environment that includes residential and railroad development. Most of the ground surface has been covered in pavement, artificial fill, or other obstructions which limit visibility. The area contains numerous housing developments, most of which are not historic-age (i.e., 50 years old or older).

The project archaeologist requested an updated search of the NAHC SLF database to determine the presence of Native American cultural resources within the project area. The NAHC response letter indicated that no Native American cultural resources have been recorded within the APE or within 0.50-mile of the project area boundaries. The NAHC letter noted that there are no federally-recognized tribes within the project area, but the letter did provide a list of Native American organizations and individuals who may have knowledge of cultural resources in the project area. As requested by the NAHC, a letter that included a brief description of the project and a project map were sent to each of the NAHC-provided contacts. These letters were sent for information-scoping purposes only, and do not constitute formal, government-to-government consultation efforts. As of publication of this document, no responses have been received.

An updated record search was conducted by a project archaeologist on January 6, 2011 at the NCIS of the CHRIS (Record Search Number SAC-11-04). The records search was completed at California State University, Sacramento to identify any documented changes to cultural resources in the project area since the completion of the studies for the Phase 2 Extension project in 2003. The results of the record search revealed that four new cultural resource studies have been completed for the project area since that time. Each of the studies included a pedestrian survey. Table 3.5-1 lists the cultural resource studies detected by the 2011 record search, and a summary of findings for each study. This is followed by a discussion on the study findings with reference to the proposed modifications considered in this IS/EA.

Realignment of the LRT Tracks Adjacent to the UPRR Mainline Tracks

This area has been assessed for several projects over the past 35 years, but most recently by JRP in 2002,¹ Far Western in 2005,² and again by Jones and Stokes in 2006.³ During that time, no cultural resources eligible for listing in the National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR) were identified in this portion of the project area.

¹ JRP Historical Consulting Services (JRP). 2003. *Historic Resources Evaluation Report: South Sacramento Corridor Phase 2 Project Sacramento County, California*. Report on file at the North Central Information Center, Sacramento.

² Waechter, S.A. 2005.

³ Jones and Stokes. 2006. *Cultural Resources Inventory and Evaluation Report for the Freeport Regional Water Project, Sacramento and San Joaquin Counties, California*. Report on file at the North Central Information Center, Sacramento.

**Table 3.5-1
Cultural Resources Investigations Related to Proposed Modifications**

Project	Relevant Location	Results	Reference
South Sacramento Corridor Phase 2 Extension Project	Includes entire project area	No effects to significant cultural resources	Waechter, S.A. 2005. Cultural Resources Inventory for the South Sacramento Corridor Phase 2 Project. Report on file at the North Central Information Center, Sacramento.
South Sacramento Corridor Phase 2 Extension Project, CEQA addendum and a re-evaluation pursuant to NEPA to the Phase 2 Extension project SFEIS/SFEIR	PG&E pipeline relocation area; Morrison Creek Levee setback area; TPSS #10 relocation area; CRC tailtrack extension area	No effects to significant cultural resources	PBS&J. 2010. South Sacramento Corridor Phase 2 NEPA Re-evaluation. Letter report included as Appendix C of this IS/EA.
Freeport Regional Water Project	WPRR tracks to Bruceville Road	No effects to significant cultural resources in these locations	Jones and Stokes. 2006. Cultural Resources Inventory and Evaluation Report for the Freeport Regional Water Project, Sacramento and San Joaquin Counties, California. Report on file at the North Central Information Center, Sacramento.
Central Sewer Trunk Rehabilitation Project	WPRR tracks to Bruceville Road	No prehistoric or historic archaeological resources identified	Sikes and Martinez. 2008. Cultural Resources Survey of the Central Sewer Trunk Rehabilitation Project, Sacramento County, California. Report on file at the North Central Information Center, Sacramento.
College Square Planned Unit Development	Just northeast of the tailtrack extension at end of alignment	No cultural resources pursuant to CEQA identified	EDAW, Inc. 2003. Cultural Resources Survey Report: College Square Planned Unit Development. Report on file at the North Central Information Center, Sacramento.

Structures within the updated archaeological and architectural APEs for this section of the Phase 2 Extension project alignment consist of 1970s-vintage single family homes. Since all of these structures are less than 50 years old, none meet the age requirement for listing in the NRHP or the CRHR. Thus, no cultural resources eligible for listing in the NRHP or CRHR have been identified in this portion of the project area.

PG&E Natural Gas Pipeline Relocation (Applicable to Design Option B Only)

The area proposed for the PG&E natural gas pipeline relocation was assessed in 2005 by Far Western Anthropological Group.⁴ Their assessment included archival research of the entire PG&E pipeline replacement area and a pedestrian survey of the open area on Ann Arbor Way. This portion of the project area was also investigated by project archaeologists in October 2009 as part of surveys conducted for a CEQA addendum and a NEPA re-evaluation for then-proposed Phase 2 Extension project modifications.⁵ All investigations returned negative results for the presence of known or visible cultural resources in this area.

Morrison Creek Levee Setback

Morrison Creek Levee was evaluated in 2003⁶ and 2006⁷ for possible inclusion in the NRHP and CRHR. Both evaluations found that the levee lacked sufficient integrity for listing. Subsurface investigations completed to the west of this location indicated that the soils present in this area consist of highly disturbed imported fill to a depth of up to three feet below the ground surface.⁸ As such, the potential for unknown, subsurface cultural resources to be discovered in this area is considered very low.

Structures within the updated archaeological and architectural APEs for this section of the Phase 2 Extension project alignment consist of 1970s-vintage single family homes. Since all of these structures are less than 50 years old, none meet the age requirement for listing in the NRHP or the CRHR. Similar to the area along the pipeline relocation, no cultural resources eligible for listing in the NRHP or CRHR have been identified in this portion of the project area.

TPSS #10 Relocation

The proposed TPSS #10 relocation parcel was investigated by project archaeologists in October 2009 as part of surveys conducted for a CEQA addendum and a NEPA re-evaluation for then-proposed Phase 2 Extension project modifications.⁹ Soils in this area are principally imported fill material. No

⁴ Waechter, S.A. 2005. *Cultural Resources Inventory for the South Sacramento Corridor Phase 2 Project*. Report on file at the North Central Information Center, Sacramento.

⁵ PBS&J. 2009. *South Sacramento Corridor Phase 2 NEPA Re-evaluation*. Letter report included as Appendix C of this IS/EA.

⁶ JRP Historical Consulting Services (JRP). 2003.

⁷ Ibid.

⁸ Ibid.

⁹ PBS&J. 2009.

structures were present, and no cultural resources beyond those described in the SFEIS/SFEIR were identified during the survey. As a result, because of the absence of archaeological or architectural resources, the proposed TPSS #10 relocation would have no effect on cultural resources.¹⁰

Tailtrack Extension at Cosumnes River College

The proposed 400-foot extension is located at Cosumnes River College (CRC). The extension area falls within the original APE investigated for the 2008 SFEIS/SFEIR. This location was also investigated by project archaeologists in October 2009 for a CEQA addendum and a NEPA re-evaluation for then-proposed Phase 2 Extension project modifications. These studies indicated that no known cultural resources were present at this location.¹¹

Summary of Known Cultural Resources within the Proposed Modification Locations

Based on the results of the records searches, review of technical studies identified during the NCIS records search, a recent survey completed by project archaeologists in 2009 for the project sites, and the original surveys conducted for the SFEIS/SFEIR, no archaeological resources or historic architectural resources that are eligible for listing on the NRHP or CRHR are located within the project APEs.

Paleontological Resources within the Phase 2 Extension Project Area

The City of Sacramento General Plan indicates that the potential for significant paleontological resources to occur within the City is very low. Accordingly, the paleontological sensitivity of the Phase 2 Extension project corridor is also considered very low with little likelihood of detecting significant paleontological resources.

Applicable Policies and Regulations

Federal Regulations

Federal regulations for cultural resources are primarily governed by Section 106 of the National Historic Preservation Act (NHPA) of 1966, which applies to actions taken by federal agencies. The goal of the Section 106 review process is to offer a measure of protection to sites that are listed or determined eligible for listing on the NRHP. The criteria for determining NRHP eligibility are found in 36 *Code of Federal Regulations* (CFR) Part 60. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on Historic Properties and affords the federal Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Council's implementing regulations, "Protection of Historic Properties," are found in 36 CFR Part 800. The NRHP criteria (36 CFR 60.4) are used to evaluate resources when complying with Section 106 of the NHPA. Those criteria state that eligible resources comprise districts, sites,

¹⁰ Ibid.

¹¹ Waechter, S.A. 2005.

buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and any of the following:

- a. Are associated with events that have made a significant contribution to the broad patterns of our history;
- b. Are associated with the lives of persons significant in our past;
- c. Embody the distinctive characteristics of a type, period, or method of construction, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or
- d. Have yielded or may be likely to yield, information important to history or prehistory.

Eligible properties must meet at least one of the criteria and exhibit integrity. Historical integrity is measured by the degree to which the resource retains its historical attributes and conveys its historical character, the degree to which the original fabric has been retained, and the reversibility of changes to the property.

Certain types of properties are usually excluded from consideration for listing in the NRHP, but can be considered if they meet special requirements in addition to meeting Criteria A to D. The following seven Criteria Considerations deal with properties usually excluded from listing in the NRHP: Religious properties, moved properties, birthplaces and graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

Historic Districts derive their importance from being considered a unified entity, even though they are often composed of a variety of resources. The identity of a district results from the interrelationship of its resources, which can be an arrangement of historically or functionally related properties. A district is defined as a geographically definable area of land containing a significant concentration of buildings, sites, structures, or objects united by past events or aesthetically by plan or physical development. A district's significance and integrity should help determine the boundaries.

Within historic districts, resources are identified as contributing and noncontributing. A contributing building, site, structure, or object adds to the historic associations, historic architectural qualities, or archaeological values for which a district is significant because it was either present during the period of significance, relates to the significance of the district, and retains its physical integrity; or it independently meets the criteria for listing in the NRHP.

Archaeological site evaluation assesses the potential of each site to meet one or more of the criteria for NRHP eligibility based upon visual surface and subsurface evidence (if available) at each site location, information gathered during the literature and records searches, and the researcher's knowledge of and familiarity with the historic or prehistoric context associated with each site.

State Regulations

Under CEQA, public agencies must consider the impacts of their actions on both *historical resources* and *unique archaeological resources*. Pursuant to Public Resources Code (PRC) Section 21084.1, a “project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.” Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

Historical resource is a term with a defined statutory meaning (refer to PRC Section 21084.1 and CEQA Guidelines, Section 15064.5(a) and (b)). The term applies to any resource listed in or determined to be eligible for listing in the CRHR. The CRHR includes California resources listed in or formally determined eligible for listing in the NRHP, as well as certain California State Historic Landmarks (CHLs) and California Point of Historical Interest (PHIs).

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC Section 5024.1 and California Code of Regulations, Title 14, Section 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

In addition to assessing whether historical resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project’s impacts to historical resources (PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a)(3)). In general, an historical resource, under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that:

- a. Is historically or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and
- b. Meets any of the following criteria:
 1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
 2. Is associated with the lives of persons important in our past;
 3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
 4. Has yielded, or may be likely to yield, information important in prehistory or history.

Archaeological resources can sometimes qualify as “historical resources” (CEQA Guidelines, Section 15064.5(c)(1)). In addition, PRC Section 5024 requires consultation with the Office of Historic Preservation when a project may impact historical resources located on state-owned land.

For historic structures, CEQA Guidelines Section 15064.5(b)(3) indicate that a project that follows the Secretary of the Interior (SOI) Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the SOI Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings, shall mitigate impacts to a level of less than significant. Potential eligibility also rests upon the integrity of the resource. Integrity is defined as the retention of the resource’s physical identity that existed during its period of significance. Integrity is determined through considering the setting, design, workmanship, materials, location, feeling, and association of the resource.

As noted above, CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. PRC Section 21083.2(g) states that ‘unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- a. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
- b. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- c. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Treatment options under Section 21083.2 include activities that preserve such resources in place and in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include excavation and curation, or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a unique archaeological resource).

Advice on procedures to identify cultural resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor’s Office of Planning and Research (OPR). The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including, but not limited to, museums, historical commissions, associations, and societies, be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains.

CEQA affords protection to paleontological resources, as CEQA Guidelines indicate that a project would have a significant environmental impact if it would disturb or destroy a unique paleontological resource or site or unique geologic feature. Although CEQA does not specifically define a unique paleontological resource or site, the definition of a unique archaeological resource (Section 21083.2)

can be applied to a unique paleontological resource or site and a paleontological resource could be considered a historical resource if it has yielded, or may be likely to yield, information important in prehistory or history under Section 15064.5 (a)(3)(D).

California Public Resources Code 5097.5. Section 5097.5 of the California Public Resources Code (PRC) provides protection for cultural and paleontological resources, where PRC 5097.5(a) states, in part, that:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands.

California Health and Safety Code Sections 7050.5, 7051, and 7054. Section 7050.5(b) of the California Health and Safety code specifies protocol when human remains are discovered. The code states:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

California Public Resources Code Section 15064.5 (e). CEQA Guidelines Section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the NAHC must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the NAHC. Section 15064.5 directs the lead agency (or project proponent), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

City of Sacramento General Plan 2030. The City of Sacramento adopted its updated General Plan 2030 on March 3, 2009. The Historic and Cultural Resources section of the General Plan contains policies that provide for the identification, protection, and assistance in the preservation of historic and cultural resources. The policies maintain a citywide program consistent with the State and Federal Certified Local Government program and state laws and regulations related to historic and cultural resources (Policy HCR 2.1.2). This includes protocols to protect or mitigate impacts to archaeological, historic, and prehistoric resources (Policy HCR 2.1.15).

Impact Assessment and Mitigation Measures

Standards of Significance

The project alternatives would have a significant adverse effect on cultural resources if they would:

- Have the potential to affect historic properties pursuant to Section 106 of the NHPA, as amended;
- Cause a substantial adverse change in the significance of a historical resource as defined in the State CEQA Guidelines;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to the State CEQA Guidelines;
- Directly or indirectly destroy a unique paleontological resource or site unique geological feature, pursuant to State CEQA Guidelines; or
- Disturb any human remains, including those interred outside of formal cemeteries, pursuant to State CEQA Guidelines.

Environmental Analysis

CR-1. Historic Properties, Historical Resources, and Archaeological Resources

Alternative 1 – No Project. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. The SFEIS/SFEIR reported that no resources eligible for listing in the NRHP or the CRHR are known to be present within the Phase 2 Extension project area. Therefore, neither historic properties pursuant to Section 106 of the NHPA nor historical resources as defined by CEQA are present within the Phase 2 Extension project APE. However, the SFEIS/SFEIR identified one location within the Phase 2 Extension project APE that would require archaeological monitoring, and this area consists of the original TPSS #10 location. Its proximity to a natural stream crossing and stream-side terraces results in this area being classified as having a higher archaeological sensitivity and therefore the potential to contain unknown, subsurface resources that could be disturbed during construction. Implementation of archaeological monitoring during construction at this location as prescribed in the SFEIS/SFEIR (Mitigation Measure H&C-1) would ensure that the implementation of Alternative 1 would not have an adverse effect on subsurface resources or presently buried and unknown historic properties pursuant to Section 106 of the NHPA. Similarly, archaeological monitoring would ensure that potential impacts to any presently buried but unknown historical and archaeological resources pursuant to CEQA would be less than significant with mitigation incorporated.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously approved Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. The results of the records searches, technical study reviews, and more recent field surveys by project archaeologists in 2009 indicate that no

resources eligible for listing in the NRHP or the CRHR are known to be present within the Phase 2 Extension project area. Therefore, neither historic properties pursuant to Section 106 of the NHPA nor historical resources as defined by CEQA are present within the Alternative 2 modification areas. The SFEIS/SFEIR identified only the original TPSS #10 site within the Phase 2 Extension project APE as requiring archaeological monitoring. However, construction at the relocated TPSS#10 site would take place in an area comprised entirely of imported fill materials, which are unlikely to contain buried cultural resources. Therefore, work in this area would be unlikely to result in an adverse effect on subsurface resources or presently buried and unknown historic properties pursuant to Section 106 of the NHPA. Therefore, the implementation of Alternative 2 would not conflict with applicable federal laws and regulations relating to historic properties.. Under CEQA, the impact would be less than significant.

CR-2. Paleontological Resources

Alternative 1 – No Project. The analysis of impacts related to paleontological resources is a requirement of CEQA; there is no comparable federal requirement for the assessment of paleontological resources on non-federal lands. As such, the analysis for this topic relates to CEQA only. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. According to the City of Sacramento General Plan, the paleontological sensitivity of the impact area for the Phase 2 Extension project is very low. Accordingly, the impact under CEQA would be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. The analysis of impacts related to paleontological resources is a requirement of CEQA; there is no comparable federal requirement. As such, the analysis for this topic relates to CEQA only. Under this alternative, the previously approved Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. As with Alternative 1, the City of Sacramento General Plan classifies the paleontological sensitivity of the impact area for the Phase 2 Extension project as very low. Since the project footprint proposed under Alternative 2 is essentially identical to that proposed under Alternative 1, the impacts would be the same. Accordingly, the impact under CEQA would be less than significant.

CR-3. Human Remains

Under both Alternative 1 and Alternative 2, there are no known cemeteries or human remains within the project area of either alternative. However, there is a possibility that ground-disturbing activities could uncover previously unknown and currently buried human remains. Section 7050.5 of the California Health and Safety Code provides specific guidance as to actions that must be taken should such an incident occur. Compliance with standard statutory requirements would effectively mitigate impacts associated with either alternative. Therefore, the implementation of Alternative 2 would not conflict with applicable federal laws and regulations relating to human remains. Under CEQA, the impact would be less than significant.

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3.6 LAND USE

Introduction

This section discusses the land use characteristics in the vicinity of the proposed modifications described in Section 2, Project Alternatives, of this IS/EA, and includes an impact assessment for those alternatives. Specific land use impacts addressed include conflicts with existing uses (i.e., changes in the organization, interaction, or intensity of uses) and consistency with future plans for the project area. A detailed discussion of the existing conditions with respect to land use along the Phase 2 Extension project corridor can be found in Section 4.10, Land Use and Planning, of the previously approved 2008 SFEIS/SFEIR.

Environmental Setting

Existing and Zoned Land Uses

Realignment of the LRT Tracks Adjacent to the UPRR Mainline Track. As part of the currently approved Phase 2 Extension project, the LRT tracks in the northern portion of the alignment would be located adjacent to Sacramento Municipal Utility District (SMUD) 230kV transmission lines that are along the RT ROW and the existing UPRR mainline tracks. The dominant zoning district on either side of the UPRR corridor and in the surrounding area is single family residential (R-1); this designation also characterizes the existing uses for this portion of the project area.

PG&E Natural Gas Pipeline Relocation (Applicable to Design Option B Only). The existing PG&E natural gas pipeline within the Union Pacific Railroad (UPRR) ROW is positioned directly beneath the new light rail transit (LRT) track alignment proposed under Design Option B. The relocation of this pipeline to accommodate the Phase 2 Extension project was assessed in the SFEIS/SFEIR. The previously approved design relocated this pipeline along the entire length of Detroit Boulevard (approximately one mile) before tying back into the existing pipeline. The dominant zoning district along Detroit Boulevard and in the surrounding area is single family residential (R-1); this designation also characterizes the existing uses for this portion of the project area.

Morrison Creek Levee Setback. At the Morrison Creek Levee, the LRT alignment would leave the UPRR corridor and continue west of Morrison Creek, heading south through undeveloped property that is currently maintained as fallow agricultural land but is zoned as residential (R-1).

TPPS #10 Relocation. Under the Phase 2 Extension project analyzed under the SFEIS/SFEIR, the TPSS #10 was to be located within the future Franklin Station park-and-ride lot. The proposed modification would relocate the TPSS #10 across Franklin Boulevard to the IJAZ property, which was previously identified in the SFEIS/SFEIR as a partial acquisition for other aspects of the Phase 2 Extension project. This parcel is bounded on three sides by Cosumnes River Boulevard, Franklin Boulevard, and Union House Creek. The current zoning of the IJAZ property and for the surrounding area is single family residential (R-1). However, the property is currently vacant with no active uses.

Tailtrack Extension at Cosumnes River College. The proposed 400-foot extension is on the Cosumnes River College (CRC) campus within the ROW provided by the Los Rios Community College District for the Phase 2 Extension project. While the CRC campus is used for educational purposes, it is currently zoned as Agricultural on the City of Sacramento's zoning map.

Applicable Policies and Regulations

General Plan 2030

The City of Sacramento adopted its updated General Plan 2030 on March 3, 2009. The General Plan considered the Phase 2 Extension project as an integral part of future planned transportation infrastructure for the South Sacramento area.

Policy EC 2.1.7 of the General Plan prohibits new development within 50 feet of the landside toe of levees. Development may encroach within this 50-foot area provided that "oversized" levee improvements are made to the standard levee section consistent with local, regional, State, and federal standards.

Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan (MTP)

SACOG is the metropolitan planning organization responsible for developing the state and federally required MTP every four years in coordination with the 22 cities and six counties in the greater Sacramento region. Under memorandums of understanding, long-range transportation plans in El Dorado and Placer Counties are also incorporated into the MTP. The MTP contains goals, policies, and funding to implement transit programs across the region. Federal law also requires that the MTP conform to air quality goals of the region. Further information concerning the alternative's conformance with the MTP can be found in Section 3.2, Air Quality, of this IS/EA. Additional land use plans, policies, and regulations pertaining to the Phase 2 Extension project as a whole can be found in the Section 4.10, Land Use and Planning, of the previously adopted SFEIS/SFEIR. However, most of the land use plans and other policies referenced in the SFEIS/SFEIR relate to other portions of the larger Phase 2 Extension project area, and not to the locations of the modifications being evaluated in this IS/EA.

Impact Assessment and Mitigation Measures

Standards of Significance

The project alternatives would have a significant adverse effect on land use and planning if they:

- Result in a change in land use that would be incompatible with surrounding land uses;
- Conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project site; and
- Physically divide an established community.

Environmental Analysis

LU-1. Land Use Compatibility

Alternative 1 – No Project. The analysis of impacts related to land use compatibility is a requirement of CEQA; there is no comparable federal requirement for the assessment of land use compatibility on non-federal lands. As such, the analysis for this topic relates to CEQA only. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. The SFEIS/SFEIR determined that while the implementation of the LRT services associated with the Phase 2 Extension project would have an effect on adjacent land uses, those effects would not be adverse. The SFEIS/SFEIR determined that issues related to compatibility such as noise impacts could all be mitigated to levels that would not be adverse or result in significant impacts. Further, the SFEIS/SFEIR determined that, with mitigation, land uses adjacent to the project area would be able to continue to function as intended without substantial interference or annoyance. As such, this impact under CEQA would be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. The analysis of impacts related to land use compatibility is a requirement of CEQA; there is no comparable federal requirement for the assessment of land use compatibility on non-federal lands. As such, the analysis for this topic relates to CEQA only. Under this alternative, the previously adopted Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. Each of the proposed modifications is assessed below for their potential land use compatibility impacts.

LRT Tracks Adjacent to the UPRR Mainline Tracks. With this modification, additional ROW would be required to accommodate the LRT tracks. Securing this additional ROW would require the partial or full acquisition of adjacent residential lots. These acquisitions are described in detail in Section 2, Project Alternatives; Section 3.8, Population, Housing, and Socioeconomics; and Section 3.9, Environmental Justice. The acquisition of these properties and the construction of the LRT tracks would not preclude or inhibit the continued use of the adjacent residential subdivision for its intended purpose. Installation of sound barriers (see Section 3.7, Noise and Vibration) to mitigate the effect of the LRT project would also serve to mitigate the noise from the adjacent UPRR freight line. Therefore, the overall noise in the area would be lower than existing levels. Based on these considerations, implementation of this component of Alternative 2 would not result in a significant impact under CEQA.

PG&E Natural Gas Pipeline Relocation (Applicable to Design Option B Only). The relocation of the pipeline would not conflict with existing uses. Once installed, the pipeline would not alter the activities of the adjacent residences nor would it impede or impair the conduct of those activities. Land use in the area would remain unchanged from existing conditions. Therefore, the implementation of this component of Design Option B would not result in a significant impact under CEQA.

Morrison Creek Levee Setback. With this modification, additional ROW would be required to accommodate the LRT tracks. Securing this additional ROW would require the partial acquisition of small portions of two residential back yards. These acquisitions are discussed in detail in Section 3.8, Population, Housing, and Socioeconomics, as well as Section 3.9, Environmental Justice. The acquisition of these properties and the construction of the LRT tracks would not preclude or inhibit the continued use of these residences for their intended use. Installation of sound barriers (see Section 3.7, Noise and Vibration) to mitigate the effect of the LRT project would also serve to mitigate the noise from the adjacent UPRR freight line. Therefore, the overall noise exposure at these two residences would be lower than existing levels. Based on these considerations, the implementation of this component of Alternative 2 would not result in a significant impact under CEQA.

TPSS #10 Relocation. The TPSS relocation would occur on the vacant IJAZ property. The IJAZ property is surrounded by residential development and a busy traffic intersection. The relocation of TPSS #10 to this parcel would not preclude or inhibit these adjacent uses. The residential properties are effectively separated from the IJAZ parcel by Union House Creek and backyard walls. The relocation of the TPSS would not create any impacts to these properties that would disallow their current use or create substantial interference or annoyance. Therefore, implementation of this component of Alternative 2 would not result in a significant impact under CEQA.

Tailtrack Extension at Cosumnes River College. This modification would take place on the CRC campus adjacent to a parking lot on a parcel that has already been designated for use by the Phase 2 project. The modification would extend the tailtracks further into this parcel and would not alter the planned uses for the area. The extension would be constructed adjacent to a parking area and would not be proximate to public gathering, recreation, or education venues. Therefore, implementation of this component of Alternative 2 would not result in a significant impact under CEQA.

LU-2. Applicable Land Use Plans, Policies, or Regulations of an Agency

Alternative 1 – No Project. This alternative would construct the Phase 2 Extension project as assessed under the SFEIS/SFEIR without the proposed modifications. Under Alternative 1, the LRT tracks would be constructed approximately 20 feet from the UPRR mainline tracks and would not comply with UPRR’s recently adopted urban railway policy, which requires a minimum 50-foot track separation, or 25-foot minimum if a crash wall is installed. Additionally, the RT ROW would remain as previously designed in relation to the Morrison Creek levee and would not meet the minimum 50-foot setback requirement set forth in the City of Sacramento General Plan. Therefore, the implementation of Alternative 1 would result in an adverse land use plan consistency effect with respect to UPRR and City safety policies. Under CEQA, the project’s impacts would be significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. Since approval of the SFEIS/SFEIR in 2008, UPRR has updated its track separation safety with the urban railway policy discussed above. Each of the three proposed design options for track realignment would satisfy the UPRR separation requirement,.

Similarly, the City of Sacramento's updated General Plan requires a greater setback requirement from earthen levees. In response to this policy, the LRT track realignment at the Morrison Creek Levee under Alternative 2 would conform to the City's safety policy that new development be located at least 50 feet away from flood control levees.

Similar to Alternative 1, Alternative 2 is a MTP-conforming project based on the analysis provided in this IS/EA. The proposed modifications under this alternative would not add additional train revenue miles, railcars, or stations to the South Line LRT system, beyond those that have already been assessed in the SFEIS/SFEIR. Similar to Alternative 1, emissions from the implementation of Alternative 2 would be well below the thresholds for ROG, NO_x, PM₁₀, and PM_{2.5}. Any potential increases in construction emissions resulting from the implementation of Alternative 2 would be offset by other actions associated with the project's construction. Therefore, Alternative 2 is also a conforming project and would be eligible for federal funding.

The remaining modifications proposed under Alternative 2 would not substantively change the previously approved Phase 2 Extension project, which the SFEIS/SFEIR determined to be consistent with relevant policies, plans, and agency regulations. As such, the implementation of Alternative 2 would not result in an adverse effect with respect to consistency with adopted plans. Under CEQA, the impact would be less than significant.

LU-3. Physically Divide an Established Community

Alternative 1 – No Project. The analysis of impacts related to the division of an established community is a requirement of CEQA; there is no comparable federal requirement for the assessment of this topic. As such, the analysis for this topic relates to CEQA only. This alternative would construct the Phase 2 Extension project as assessed under the SFEIS/SFEIR without the proposed modifications. The SFEIS/SFEIR determined that the Phase 2 Extension project would not physically divide an established community, since it would largely be constructed along or within existing transportation corridors and other features that already delineate community and neighborhood boundaries. Examples of these existing boundaries include the existing UPRR corridor, the Union House Creek flood control channel, and arterial roadways. These features already serve as community and neighborhood boundaries within the project area, and the Phase 2 Extension alignment would follow or parallel these existing features and therefore would not create new barriers that are not already present. As such, the implementation of Alternative 1 would not divide an established community and the impact under CEQA would be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. The analysis of impacts related to the division of an established community is a requirement of CEQA; there is no comparable federal requirement for the assessment of this topic. As such, the analysis for this

topic relates to CEQA only. This alternative would implement a number of modifications to the previously approved Phase 2 Extension project. Impacts associated with each of the modifications are discussed below.

LRT Tracks Adjacent to the UPRR Mainline Tracks. The UPRR corridor already serves as a division between the neighborhoods to the west and those on the east, as do the existing SMUD transmission lines. Under existing conditions, the two neighborhoods are separated by backyard fences, the larger UPRR ROW, the SMUD transmission line, and the UPRR mainline tracks themselves. UPRR prohibits trespass upon its ROW without special permission, and maintains its own police force to enforce its ROW boundaries and to protect against trespass. As such, the UPRR ROW already divides the neighborhoods on either side of the corridor.

The implementation of Alternative 2 would not change this existing condition, regardless of which design option is implemented. The primary difference among the design options is the width of the required ROW to accommodate the LRT tracks. The width of the design options is immaterial since the UPRR corridor already serves as an effective division of the community, and minor variations in ROW width would not change that condition. As such, the implementation of Alternative 2 would not result in a significant impact under CEQA.

PG&E Natural Gas Pipeline Relocation (Applicable to Design Option B Only). The relocation of the PG&E pipeline was assessed in the SFEIS/SFEIR for its potential to divide an existing neighborhood and was determined to be not adverse under NEPA and less than significant under CEQA. Once the pipeline is installed, it would be underground and would not physically sever or divide any portion of the community. As such, the implementation of Alternative 2, Design Option B, would not result in a significant impact under CEQA.

Morrison Creek Levee Setback. The Morrison Creek levee already acts as a division between the neighborhoods lying west of the alignment and those lying to the east. Further, the UPRR mainline tracks that lie adjacent to the levee also act as an additional division between the neighborhoods. The widening of the LRT ROW in this area would not change this condition. As such, implementation of this component of Alternative 2 would not result in a significant impact under CEQA.

TPSS #10 Relocation. The parcel onto which TPSS #10 would be relocated was previously identified for partial acquisition in the SFEIS/SFEIR. The full acquisition of this parcel to accommodate the relocated TPSS under Alternative 2 would not substantially alter the uses that were already proposed for this parcel. Further, this triangular-shaped parcel is situated between Franklin Boulevard to the west, Cosumnes River Boulevard to the south, and Union House Creek to the north. Each of these features already serves as an effective separator from the adjacent neighborhoods. The relocation of TPSS #10 would not change this condition, since the parcel is already effectively isolated and separated from the adjacent neighborhoods. As such, implementation of this component of Alternative 2 would not result in a significant impact under CEQA.

Tailtrack Extension at Cosumnes River College. This modification would take place on the CRC campus between an existing campus parking lot and Bruceville Road. This area does not serve as a connection for persons traveling between neighborhoods, although the intersection of Bruceville Road and Old Calvine Road to the southeast does contain crosswalks to facilitate pedestrians crossing the roadways to access the CRC campus. The tailtrack extension would not block pedestrian access to these crosswalks and pedestrian traffic would be able to continue unimpeded. As such, implementation of this component of Alternative 2 would not result in a significant impact under CEQA.

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3.7 NOISE AND VIBRATION

Introduction

This section presents the findings of the noise and vibration analysis for the proposed modifications to the Phase 2 Extension project. This section summarizes the existing ambient noise and vibration conditions in the areas of the proposed modifications and the projected changes in noise and vibration levels from implementation of the modifications relative to the significance criteria of the Federal Transit Administration (FTA). Full detail of the project noise and vibration analysis is presented in *Noise and Vibration Supplemental Report: South Sacramento Corridor Phase 2 Project* (May 2011), included herein as Appendix D. As was the case for the SFEIS/SFEIR, this noise and vibration analysis of the proposed modifications follows the methodology and significance criteria of the FTA *Transit Noise and Vibration Impacts Assessment* (May 2006).

The analysis in this section focuses on those locations where the proposed modifications would have a potentially significant noise and vibration. In particular, the proposed westward shift of the RT alignment in the vicinity of the Union Pacific Railroad (UPRR) mainline tracks between Meadowview Road and the Morrison Creek Levee would generally increase noise and vibration levels at the adjacent residences west of the corridor and reduce noise and vibration levels at the adjacent residences east of the corridor. Additionally, the proposed relocation of TPSS #10 has the potential for noise impacts to nearby noise sensitive residential receptors.

By contrast, two of the proposed modifications would have no substantial noise and vibration impacts. The proposed PG&E natural gas pipeline relocation would have no noise or vibration effects during its operation. During the construction period, however, the proposed modification would reduce the construction on Detroit Boulevard proposed previously, thereby reducing construction noise and vibration impacts previously described in the SFEIS/SFEIR. The proposed extension of the tailtracks at the project's southern terminus would also not substantially affect nearby noise/vibration-sensitive receptors.

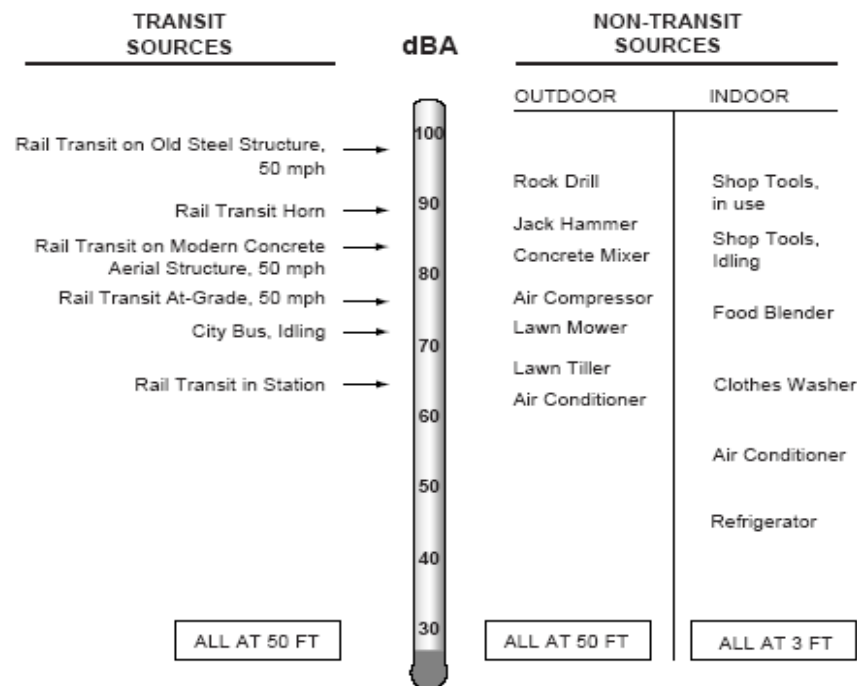
Environmental Setting

Key Definitions and Terminology

Sound is mechanical energy transmitted by pressure waves in the air. *Noise* is generally defined as unwanted or excessive sound. The loudness of sound is associated with its sound pressure level, most commonly measured in decibels (dB). Measured sound levels are usually averaged to provide a single numerical descriptor that correlates well with human subjective response in judging sound as noise. Sound levels measured using this system are called "A-weighted" sound levels and are expressed in decibel notation as "dBA." The A-weighted sound level is widely accepted as the most appropriate unit for describing environmental noise.

The severity of noise affecting residential areas is usually characterized by the measured day-night average sound level (L_{dn}), which is the A-weighted, 24-hour average sound level with a 10-decibel "penalty" added

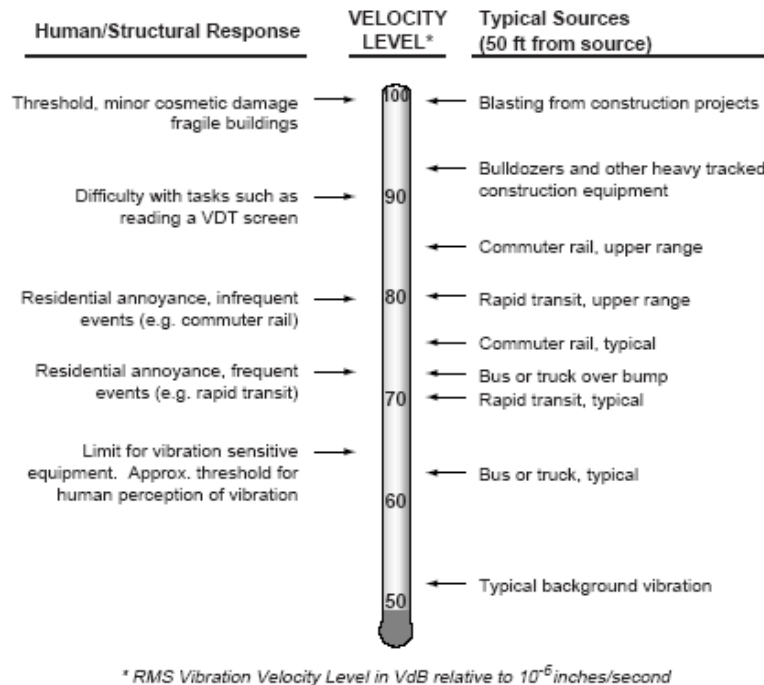
to levels during the nighttime hours (i.e., between 10 p.m. and 7 a.m.). Many surveys have shown that L_{dn} correlates well with human annoyance; therefore, this descriptor is widely used for environmental noise impact assessment and is especially preferred by the FTA for gauging impacts to residential receptors. Figure 3.7-1 shows the typical L_{dn} levels encountered near commuter-train and light-rail transit systems in comparison with L_{dn} background levels of urban areas of varying population density.



Source: FTA, *Transit Noise and Vibration Impact Assessment, Final Report, May 2006.*

Figure 3.7-1
Typical Noise Levels

Vibration is an oscillatory motion of the ground. For vibration generated by trains and light rail transit (LRT) systems, human response correlates best with the ground vibration velocity levels produced by these sources. Similar to the convention used for noise, decibel units are also used to express vibration intensity. To avoid confusion with sound decibels, the term “VdB” is used to denote vibration decibels. Figure 3.7-2 shows the typical VdB levels encountered near commuter and light rail transit systems in comparison with human or structural response thresholds used to evaluate vibration impact severity.



Source: FTA, *Transit Noise and Vibration Impact Assessment, Final Report*, May 2006.

Figure 3.7-2
Typical Levels of Ground-Borne Vibration

Existing Conditions

Noise. Sensitive land uses that would be affected by the proposed realignment of the LRT tracks between Meadowview Road and the Morrison Creek levee consist solely of single-family residences. Existing noise conditions in the corridor were determined in 2002 through measurements at 7659 Laurie Way ($L_{dn} = 63$ dBA), 3637 Reel Circle ($L_{dn} = 64$ dBA), and 7886 Deer Lake Drive ($L_{dn} = 56$ dBA) as presented in the SFEIS/SFEIR. The effect of the freight trains on ambient noise is illustrated by the difference in the noise levels between the monitoring locations at Laurie Way and Reel Circle, both of which are about 200 feet from the Union Pacific line, and the monitoring location at Deer Lake Drive, which is more than 500 feet from the Union Pacific line. A 100- to 200-foot setback from the Union Pacific line is a general characteristic of the residences in the corridor that were the focus of the supplemental noise and vibration analysis.

Since these noise measurements were made in 2002, and noise levels change over time as urban development increases the type and number of noise sources a community is exposed to, a subsequent 24-hour noise measurement was performed in January 2011 to provide an updated background level for the residences in the corridor. At 7659 Laurie Way, the L_{dn} was measured to be 65 dBA, about 2 dBA higher than it was in 2002. Such an increase in community noise exposure is reasonable in this area because of the increase in urban development experienced in the Sacramento outskirts over the past decade. The locations of the old and new noise measurement locations in the project corridor are shown in Figure 3.7-3. Since Union Pacific freight trains are the dominant influence on ambient noise levels in the corridor and the closest residences to the Union Pacific tracks have similar setbacks, the

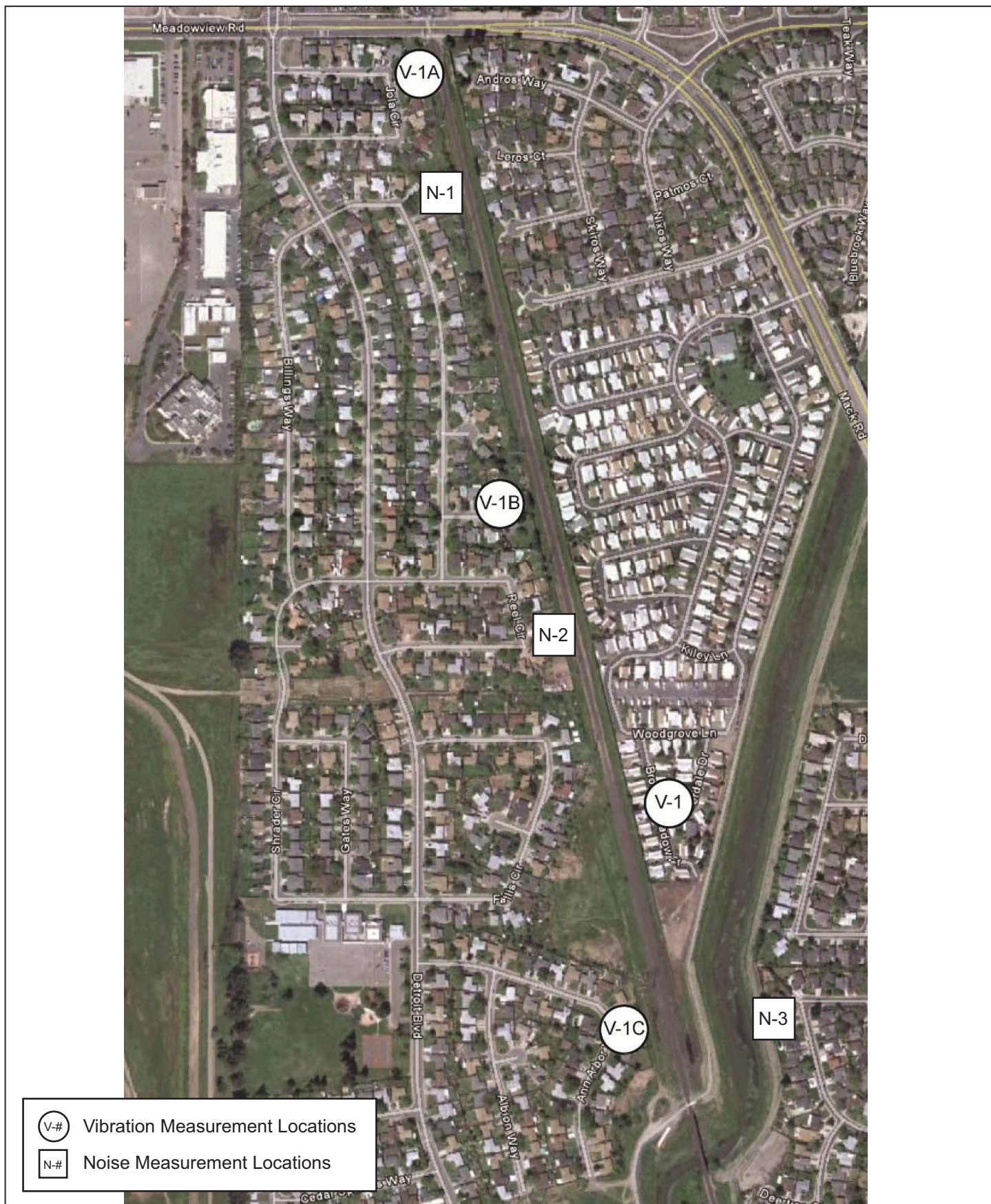


FIGURE 3.7-3
Noise and Vibration Measurement Locations

Source: Project Team, 2011.

recent measurement at Laurie Way is likely characteristic of the current ambient noise background level for all the adjacent residences that were the focus of the supplemental noise and vibration analysis. Note that L_{dn} is a measure of the 24-hour average noise level, but the short-term noise level during a train pass-by is much higher. During each five to 10 minute Union Pacific train pass-by as measured in January 2011, noise levels at the Laurie Way monitoring location were 80 dBA or higher.

Except for the freight trains, the residential communities along the corridor are relatively quiet with noise coming from distant arterial roads and freeways, normal community activities such as landscaping equipment, local traffic, and occasional aircraft overflights.

Vibration. The only significant sources of ground-borne vibration in the project corridor are the freight trains operating along the UPRR tracks. Vibration levels from the freight trains were determined from measurements done for the SFEIS/SFEIR; they were found to range from 75 VdB at 100 feet to 72 VdB at 200 feet. Since there has been no substantive change in freight train equipment or operations in the UPRR corridor since the SFEIS/SFEIR was adopted, vibration levels resulting from current freight train operations should be very similar.

Vibration propagation tests were also performed for the SFEIS/SFEIR to characterize the capacity of the soil to transmit vibration energy from operation of the proposed light rail line. Supplemental vibration testing was performed in January 2011 at three sites in the project corridor as shown in Figure 3.7-3 (i.e., new measurements at Locations V-1A, V-1B and V-1C; the testing site reported in the SFEIS/SFEIR is Location V-1) to increase the accuracy of the vibration model in this section of the project corridor and to obtain a more accurate estimate of the outdoor-to-indoor vibration energy transfer at residences in this section.

Applicable Policies and Regulations

FTA Noise Criteria

FTA noise evaluation methodology and impact significance criteria are founded on well-documented research on community reaction to noise from transportation sources. Changes in noise exposure produced by transportation sources are evaluated on a “sliding scale,” as shown in Table 3.7-1, which imposes stricter limits on transportation source noise increases in neighborhoods with higher levels of existing background noise.

The FTA criteria group noise-sensitive land uses into the following categories.

- **Category 1:** Buildings or parks where quiet is an essential element of their purpose.
- **Category 2:** Residences and buildings where people normally sleep. This category includes residences, hospitals, and hotels where nighttime sensitivity is assumed to be of utmost importance.
- **Category 3:** Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, churches, active parks, and medical offices.

Table 3.7-1
Federal Transit Administration
Exterior Incremental Noise Impact Standards for Residential Uses (dBA)

Moderate Impact Threshold		Severe Impact Threshold	
Existing L_{dn}	Allowable Cumulative Noise Increment to Existing	Existing L_{dn}	Allowable Cumulative Noise Increment to Existing
45	8	45	14
50	5	50	10
55	3	55	7
60	2	60	5
65	1	65	4
70	1	70	3
75	0	75	2
80	0	80	1

Source: Federal Transit Administration, *Transit Noise Impact and Vibration Assessment*, May 2006.

L_{dn} is used to characterize noise exposure for residential areas (Category 2). For other noise-sensitive land uses, such as outdoor amphitheaters and school buildings (Categories 1 and 3), the maximum 1-hour L_{eq} during the facility's operating period is used.

There are two levels of impact included in the criteria, which are described below.

- **Moderate Impact:** In this range of noise impact, other project-specific factors must be considered to determine the magnitude of the impact and the need for mitigation. These other factors can include the predicted increase over existing noise levels, the types and number of noise-sensitive land uses affected, existing outdoor-indoor sound insulation, and the cost effectiveness of mitigating noise to more acceptable levels.
- **Severe Impact:** Severe noise impacts are considered “significant” as this term is used in NEPA and implementing regulations. Noise mitigation will normally be specified for severe impact areas unless there is no practical method of mitigating the noise.

In addition, the FTA guidance manual does not include any noise limits that are specifically applicable to stationary ancillary equipment such as TPSSs. Commonly applied limits for this type of noise in residential areas is 10 dBA more than the minimum hourly L_{90} (the sound level exceeded 90 percent of the time) or a maximum of 45 dBA at any residence, whichever is more stringent.

The FTA offers the following guidance in determining which noise impact threshold to apply in specific project circumstances:

- **Moderate Impact:** Predicted noise levels in the “... moderate impact range will also require consideration and adoption of mitigation measures when it is considered reasonable. The range of Moderate Impact delineates an area where project planners are alerted to the

potential for adverse impacts and complaints from the community and must then carefully consider project specifics as well as details concerning the affected properties in determining the need for mitigation.” Factors that may be considered when deciding whether to mitigate moderate impacts can include the predicted increase over existing noise levels, the type and number of noise-sensitive land uses affected, existing outdoor indoor sound insulation, and the cost effectiveness of mitigating noise to more acceptable levels.

- **Severe Impact:** *“Impacts in this range have the greatest adverse impact on the community; thus there is a presumption by FTA that mitigation will be incorporated in the project unless there are truly extenuating circumstances which prevent it.”*

The FTA notes that no standardized criteria have been developed for assessing construction noise impacts. However, it does recommend as part of its General Assessment procedure for addressing construction noise that the potential for impact be evaluated by estimating the combined noise level from the two noisiest pieces of equipment likely to operate at the same time. Adverse impacts would occur at nearby residential receptors, for example, where the noise level exceeds 90 dBA during the day and 80 dBA at night. Controls involving construction planning and scheduling and equipment would then be implemented to reduce construction noise intrusions to these receptors to the maximum feasible extent.

City of Sacramento General Plan

The *Sacramento 2030 General Plan* adopted the recommendations of the Governor’s Office of Planning and Research (OPR) *General Plan Guidelines 2003*, which promotes use of L_{dn} in California for evaluating the compatibility of various land uses with respect to their noise exposure. The *General Plan Guidelines* also identify the suitability of various types of land uses within a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. The designation of a noise level as *Normally Acceptable* for a given land use category implies that both exterior and interior noise levels would be acceptable to the occupants without the need for any special structural acoustic treatment to reduce interior noise levels; residential land uses are *Normally Acceptable* in areas where the L_{dn} is 60 dBA or less. The designation of a noise level as *Conditionally Acceptable* implies that exterior and interior noise levels could be problematic to the occupants, but feasible acoustic treatments are available to reduce exterior and/or interior noise levels to acceptable levels; residential land uses are *Conditionally Acceptable* in areas where the L_{dn} is between 60 dBA and 70 dBA. The designation of a noise level as *Unacceptable* implies that exterior and interior noise levels would be problematic to the occupants and that there may not be feasible acoustic treatments available to reduce exterior and/or interior noise levels to acceptable levels; residential land uses are *Unacceptable* in areas where the L_{dn} is greater than 70 dBA.

City of Sacramento Noise Ordinance

Protection of the population of Sacramento from “excessive, unnecessary, or offensive noise” is implemented through the City’s Noise Ordinance (Chapter 8.68 of the Sacramento Municipal Code).

The following sections of the Noise Ordinance are relevant to the evaluation of potential noise impacts for this project.

Section 8.68.060, Exterior Noise Standards. The following noise standards unless otherwise specifically indicated shall apply to all agricultural and residential properties

1. From seven a.m. to ten p.m. the exterior noise standard shall be fifty-five (55) dBA.
2. From ten p.m. to seven a.m. the exterior noise standard shall be fifty (50) dBA.
3. It is unlawful for any person at any location to create any noise which causes the noise levels when measured on agricultural or residential property to exceed for the duration of time set forth following, the specified exterior noise standards in any one hour by:

Cumulative Duration of the Intrusive Sound	Allowance Decibels
30 minutes per hour	0
15 minutes per hour	+5
5 minutes per hour	+10
1 minute per hour	+15
Level not to be exceeded for any time per hour	+20

Section 8.68.080. This section provides that the following activities shall be exempted from the provisions of the noise ordinance: noise sources due to the erection (including excavation), demolition, alteration or repair of any building or structure between the hours of seven a.m. and six p.m., on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, and between nine a.m. and six p.m. on Sunday; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order.

FTA Vibration Criteria

The FTA criteria for general vibration assessments are based on land use type and train pass-by frequency, as shown in Figure 3.7-2. These general assessment criteria are used first to identify potential vibration impacts. If vibration levels exceed the general assessment criteria, then more detailed assessment criteria based on the frequency spectrum of the predicted vibrations are applied to determine if vibration mitigation would be required at potentially affected receptors. If part of the predicted vibration spectrum exceeds the detailed assessment values defined by the FTA for each frequency component, vibration mitigation is required.

Table 3.7-2
FTA Ground-Borne Vibration Impact Criteria for General Assessment

Land Use Category	GBV Impact Levels (VdB)		
	Frequent Events ^a	Occasional Events ^b	Infrequent Events ^c
<i>Category 1:</i> Buildings where vibration would interfere with interior operations	65 ^d	65 ^d	65 ^d
<i>Category 2:</i> Residences and buildings where people normally sleep	72	75	80
<i>Category 3:</i> Institutional land uses with primarily daytime uses	75	78	83

Source: Federal Transit Administration, Transit Noise Impact and Vibration Assessment, May 2006.

Notes:

- a. "Frequent Events" is defined as more than 70 vibration events of the same source per day.
- b. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
- c. "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.
- d. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.

Impact Assessment and Mitigation Measures

Standards of Significance

The project alternatives would have a significant adverse effect on noise or vibration levels if:

- They result in excessive noise exposure or a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- They result in exposure of persons to or generation of excessive groundborne vibration levels;
- They result in a substantial temporary or periodic increase in ambient noise levels or groundborne vibrations in the project vicinity above levels existing without the project;
- They result in people residing or working in the area being exposed to excessive aircraft noise levels;
- Transit-system operational noise contributes to a cumulative increase in noise levels that would be considered as a severe impact by FTA criteria;
- Ancillary equipment noise levels exceed 45 dBA at the nearest indoor noise sensitive receptor;
or
- Operation of the transit system would result in vibration levels in buildings that exceed FTA criteria.

The Sacramento Noise Ordinance is usually applied to stationary noise sources, such as mechanical equipment, or outdoor entertainment events and other nuisance sources. Applicable requirements of the Noise Ordinance will be used in the CEQA-related evaluation of project construction noise impacts and of noise from the proposed relocation of TPSS #10. It should be noted that existing noise levels along the

proposed LRT alignment are already generally higher than the threshold levels established in the Noise Ordinance. FTA methodology and criteria are required to be followed for all federally funded rail projects, and will be applied here to identify LRT operational noise and vibration impacts under NEPA.

The requirements of the Sacramento General Plan are addressed in evaluating the existing and future compliance of affected residential uses with General Plan noise exposure guidelines under CEQA.

Environmental Analysis

This analysis assesses only those proposed modifications to the Phase 2 Extension project that have the potential to result in substantial changes to noise and vibration impacts within close proximity to sensitive receptors. As noted previously, two of the five proposed modifications do not meet these criteria and are thus not subjected to detailed analysis for noise and vibration impacts:

- **PG&E Natural Gas Pipeline Relocation (applicable to Design Option B only).** The relocation of the PG&E pipeline was assessed in the SFEIS/SFEIR. The proposed relocation assessed in the SFEIS/SFEIR considered relocation of the pipeline along the entire length of Detroit Boulevard, a distance of approximately one mile. The modification proposed in Alternative 2, Design Option B, of this IS/EA would shorten the length of pipeline to half the length of Detroit Boulevard, a distance of 0.5 miles, consequently reducing temporary construction noise and vibration impacts. In addition, the SFEIS/SFEIR analyzed the installation of a pipeline within the existing utility corridor, which is also proposed as part of Alternative 2 in this IS/EA. As such, temporary construction noise and vibration impacts associated with this action have already been assessed and have been found in the SFEIS/SFEIR to not be in conflict with applicable federal laws and regulations with respect to noise and vibration. Under CEQA, the impact would be less than significant. Accordingly, additional detailed analysis for this modification is not warranted.
- **Tailtrack Extension at Cosumnes River College.** The purpose of the tailtrack extension is to provide an additional storage area for out-of-service LRT vehicles. During a typical day, LRT vehicles would be moved onto the tailtrack where they would sit idle for several hours until the next commute period, at which time they would be moved back onto the mainline track and placed back into service. The movement of the LRT vehicles in and out of the tailtrack area would create negligible noise. The LRT vehicles would be moving at extremely low speeds (less than five miles per hour). Based on the low speeds at which the vehicles would be operating, noise and vibration associated with wheel-to-rail contact would be minimal. As a result, the noise and vibration created during operation of the tailtrack extension would be negligible and would not conflict with applicable federal laws and regulations with respect to noise and vibration. Under CEQA, the impact would be less than significant. Accordingly, additional detailed analysis for this modification is not warranted.

The other three proposed modifications have the potential to create a substantial change in levels of noise and vibration, and thus are evaluated further in this IS/EA. These modifications are also located in close proximity to sensitive receptors and therefore have the potential to create an adverse effect. Shifting the RT alignment westward in the vicinity of the UPRR mainline tracks and at the Morrison Creek levee would generally increase noise and vibration levels at the adjacent residences west of the

corridor and reduce noise and vibration levels at the adjacent residences east of the corridor. Since these proposed modifications are located immediately adjacent to one another along the northern portion of the proposed RT alignment, they are evaluated and referred to collectively as the “UPRR corridor” in the discussion below. The analysis also considers the effects associated with each of the three design options presented under Alternative 2. The proposed relocation of TPSS #10 has the potential for noise impacts to nearby noise sensitive receptors. The TPSS analysis considers the noise control requirements that the Noise Ordinance would impose on the equipment to reduce potential impacts to suitable levels.

NOI-1. Excessive Increase in Noise per CEQA and FTA Criteria

Alternative 1 – No Project. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. Noise measurements and modeling conducted for the SFEIS/SFEIR determined that the background noise level in 2002 was 63 dBA L_{dn} for the residences adjacent to the UPRR corridor and that with the proposed LRT in operation total noise levels would generally increase to the mid to upper 60s dBA L_{dn} . Thus, noise levels including LRT operations under this alternative would generally remain in the Conditionally Acceptable range for residential uses as defined by the City of Sacramento General Plan.

The SFEIS/SFEIR determined that sound walls of suitable heights would be required to mitigate the increase in noise to levels acceptable under FTA criteria and to reduce the total noise exposure of the residences and maintain them within the Conditionally Acceptable range. Mitigation to that effect was adopted in the SFEIS/SFEIR for both the west and east sides of the corridor. Mitigation Measure N&V-1 prescribed a six-foot sound wall on the west side of the corridor and a 12-foot wall on the east side of the corridor. With the implementation of this mitigation, the SFEIS/SFEIR determined that the project’s effects would not exceed the FTA’s Moderate and Severe noise impact criteria and would keep resultant noise levels within the General Plan’s Conditionally Acceptable range. Under CEQA, the impact would be less than significant, as mitigated.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously adopted Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA.

LRT Tracks Adjacent to the UPRR Mainline Tracks. The FTA noise prediction methodology accounts for the forecasted future number of daily LRT operations, the distribution of LRT trips throughout the day, the distance of adjacent residences from the tracks, the LRT speed, and other site-specific conditions. The updated noise measurements conducted along the corridor in January 2011 were used to determine current background noise levels. The predicted noise associated with installation of the LRT was then modeled to determine the likely effects of the three design options on nearby sensitive receptors. The primary noise-sensitive receptors in the project area are the residences adjacent to the corridor. The tables presented with the discussion of each design option below include the following information for

each design option: 1) existing noise levels; 2) the distance from the sensitive receptor to the LRT tracks; 3) the projected noise level from LRT operations under the specified design option; 4) the FTA Moderate and Severe impact criteria; 5) the identification of properties where the Moderate and Severe impact criteria are predicted for each design option; and 6) the height of the sound wall needed to mitigate the noise levels to below the FTA Moderate and Severe impact criteria. Specific impacts and recommended mitigations of the three design options are summarized below.

- **Design Option A:** Under this option, sensitive receptors to the west of the alignment would be located as close as 17 feet from the LRT tracks. The modeling results summarized below in Table 3.7-3 found that total noise levels along the west side of the corridor would generally increase to the upper 60s to the mid 70s dBA L_{dn} . Thus, the noise level increase including LRT operations would be a Severe Impact under FTA criteria for almost all of the residences on the west side of the UPRR corridor, and the resultant levels for many residences would fall into the General Plan's Unacceptable range. Noise level increases at sensitive receptors to the east of the alignment would result in Moderate Impacts under FTA criteria for all of the eastern residences. However, the property line sound walls as specified in Table 3.7-3 and at locations shown in Figure 3.7-4 would mitigate the increase in noise to levels below the FTA Moderate Impact criteria and would keep resultant noise levels within the General Plan's Conditionally Acceptable range. The mitigation would also attenuate noise impacts associated with the proposed crossover switch within this portion of the alignment. With the implementation of this mitigation, the option's impacts under CEQA would be less than significant.

**Table 3.7-3
Projected Noise Impacts at Residences due to LRT Operations (Design Option A)**

Residence Location	APN	Residence Distance from Closest LRT Track Centerline (feet)	Exist Noise (dBA)	Noise With Project (dBA)	FTA Impact Threshold (dBA)		Threshold Exceeded?		Height of Sound Wall Required (feet)
					Moderate	Severe	Moderate	Severe	
Residences South of Meadowview Road Crossing – West Side (Southbound/Outbound Track)									
Jola Circle	053-0053-007	55	65	69	66	69	Yes	Yes	7
	053-0053-008	25	65	72	66	69	Yes	Yes	7
	053-0053-009	29	65	71	66	69	Yes	Yes	7
	053-0053-010	27	65	72	66	69	Yes	Yes	7
	053-0053-011	27	65	72	66	69	Yes	Yes	7
Laurie Way	053-0053-012	17	65	73	66	69	Yes	Yes	7
	053-0053-124	58	65	71	66	69	Yes	Yes	7
	053-0053-125	78	65	69	66	69	Yes	Yes	7
	053-0053-126	68	65	70	66	69	Yes	Yes	7
	053-0053-127	42	65	72	66	69	Yes	Yes	7
	053-0053-128	53	65	71	66	69	Yes	Yes	7
	053-0064-001	53	65	71	66	69	Yes	Yes	7
	053-0064-002	53	65	71	66	69	Yes	Yes	7
	053-0064-003	56	65	71	66	69	Yes	Yes	7
	053-0064-004	59	65	71	66	69	Yes	Yes	7
	053-0064-005	57	65	71	66	69	Yes	Yes	7
	053-0064-006	67	65	70	66	69	Yes	Yes	7
	053-0064-007	87	65	69	66	69	Yes	Yes	7
	053-0064-008	93	65	69	66	69	Yes	Yes	7
	053-0064-010	41	65	73	66	69	Yes	Yes	7
	053-0064-011	22	65	75	66	69	Yes	Yes	7
	053-0064-012	69	65	70	66	69	Yes	Yes	7
	053-0074-003	55	65	71	66	69	Yes	Yes	7
	053-0074-004	25	65	74	66	69	Yes	Yes	7
	053-0074-005	35	65	73	66	69	Yes	Yes	7
Reel Circle	053-0104-005	25	65	74	66	69	Yes	Yes	7
	053-0104-006	39	65	73	66	69	Yes	Yes	7
	053-0104-007	34	65	73	66	69	Yes	Yes	7
	053-0104-008	39	65	73	66	69	Yes	Yes	7
	053-0104-009	30	65	74	66	69	Yes	Yes	7
	053-0104-042	39	65	73	66	69	Yes	Yes	7

Table 3.7-3 (Con't)
Projected Noise Impacts at Residences due to LRT Operations (Design Option A)

Residence Location	APN	Residence Distance from Closest LRT Track Centerline (feet)	Exist Noise (dBA)	Noise With Project (dBA)	FTA Impact Threshold (dBA)		Threshold Exceeded?		Height of Sound Wall Required (feet)
					Moderate	Severe	Moderate	Severe	
Residences South of Meadowview Road Crossing – West Side (Southbound/Outbound Track)									
Fallis Circle	053-0093-008	59	65	71	66	69	Yes	Yes	7
	053-0093-009	37	65	73	66	69	Yes	Yes	7
	053-0093-010	49	65	72	66	69	Yes	Yes	7
	053-0093-011	59	65	71	66	69	Yes	Yes	7
Ann Arbor Way	053-0141-011	103	65	67	66	69	Yes	--	7
	053-0141-012	62	65	68	66	69	Yes	--	7
	053-0141-013	43	65	70	66	69	Yes	Yes	7
	053-0141-014	50	65	69	66	69	Yes	Yes	7
	053-0141-015	52	65	69	66	69	Yes	Yes	7
	053-0141-016	63	65	68	66	69	Yes	--	7
	053-0141-017	78	65	68	66	69	Yes	--	7
	053-0141-018	93	65	67	66	69	Yes	--	7
	053-0141-019	79	65	67	66	69	Yes	--	7
	053-0141-020	48	65	69	66	69	Yes	Yes	7
Residences South of Meadowview Road Crossing – East Side (Northbound/Inbound Track)									
Andros Way	119-0330-001	111	65	67	66	69	Yes	--	7
	119-0330-066	120	65	67	66	69	Yes	--	7
Leros Court	119-0330-055	124	65	68	66	69	Yes	--	7
	119-0330-054	112	65	68	66	69	Yes	--	7
Lesbos Court	119-0330-044	112	65	68	66	69	Yes	--	7
	119-0330-043	114	65	68	66	69	Yes	--	7
Samos Way	119-0340-015	110	65	68	66	69	Yes	--	7
	119-0340-016	118	65	68	66	69	Yes	--	7
Marshwood Circle	119-0070-047-1	114	65	68	66	69	Yes	--	7
	119-0070-047-2	118	65	68	66	69	Yes	--	7
	119-0070-047-3	107	65	68	66	69	Yes	--	7
	119-0070-047-4	112	65	68	66	69	Yes	--	7
	119-0070-047-5	113	65	68	66	69	Yes	--	7
	119-0070-047-7	110	65	68	66	69	Yes	--	7
	119-0070-047-6	146	65	67	66	69	Yes	--	7
Willowside Circle	119-0070-047-8	116	65	68	66	69	Yes	--	7
	119-0070-047-9	115	65	68	66	69	Yes	--	7

Table 3.7-3 (Con't)
Projected Noise Impacts at Residences due to LRT Operations (Design Option A)

Residence Location	APN	Residence Distance from Closest LRT Track Centerline (feet)	Exist Noise (dBA)	Noise With Project (dBA)	FTA Impact Threshold (dBA)		Threshold Exceeded?		Height of Sound Wall Required (feet)
					Moderate	Severe	Moderate	Severe	
Elkwood Circle	119-0070-047-10	118	65	68	66	69	Yes	--	7
	119-0070-047-11	112	65	68	66	69	Yes	--	7
	119-0070-047-12	135	65	67	66	69	Yes	--	7
	119-0070-047-13	143	65	67	66	69	Yes	--	7
	119-0070-047-14	111	65	68	66	69	Yes	--	7
	119-0070-047-15	115	65	68	66	69	Yes	--	7
	119-0070-047-16	111	65	68	66	69	Yes	--	7
Meadow Drive	119-0070-047-17	110	65	68	66	69	Yes	--	7
	119-0070-047-18	113	65	68	66	69	Yes	--	7
	119-0070-047-19	181	65	67	66	69	Yes	--	7
	119-0070-047-20	154	65	67	66	69	Yes	--	7
	119-0070-047-21	116	65	68	66	69	Yes	--	7
	119-0070-047-22	112	65	68	66	69	Yes	--	7
	119-0070-047-23	113	65	68	66	69	Yes	--	7
	119-0070-047-24	112	65	68	66	69	Yes	--	7
	119-0070-047-25	116	65	68	66	69	Yes	--	7
	119-0070-047-26	114	65	68	66	69	Yes	--	7
	119-0070-047-27	116	65	68	66	69	Yes	--	7
	119-0070-047-28	115	65	68	66	69	Yes	--	7
	119-0070-047-29	111	65	68	66	69	Yes	--	7
	119-0070-047-30	119	65	68	66	69	Yes	--	7

Source: Project consultant team, July, 2011.



- Design Option B:** Under this option, sensitive receptors to the west of the alignment would be located as close as 28 feet from the LRT tracks. The modeling results summarized below in Table 3.7-4 found that total noise levels along the west side of the corridor would generally increase to the upper 60s to the low 70s dBA L_{dn}. Thus, similar to Design Option A, the noise level increase including LRT operations under Design Option B would be a Severe Impact under FTA criteria for almost all of the western residences and the resultant levels for many would fall into the General Plan's Unacceptable range. Noise level increases at sensitive receptors to the east of the alignment would result in Moderate Impacts under FTA criteria for all of the eastern residences. However, property line sound walls (six feet high to the west and seven feet high to the east) at the locations shown in Figure 3.7-4 would mitigate the increase in noise to levels to below the FTA Moderate Impact criteria and keep resultant noise levels within the General Plan's Conditionally Acceptable range. With the implementation of this mitigation, the option's impacts under CEQA would be less than significant.

Table 3.7-4
Projected Noise Impacts at Residences due to LRT Operations (Design Option B)

Residence Location	APN	Residence Distance from Closest LRT Track Centerline (feet)	Exist Noise (dBA)	Noise With Project (dBA)	FTA Impact Threshold (dBA)		Threshold Exceeded?		Height of Sound Wall Required (feet)
					Moderate	Severe	Moderate	Severe	
Residences South of Meadowview Road Crossing – West Side (Southbound/Outbound Track)									
Jola Circle	053-0053-007	66	65	68	66	69	Yes	--	6
	053-0053-008	36	65	71	66	69	Yes	Yes	6
	053-0053-009	40	65	70	66	69	Yes	Yes	6
	053-0053-010	38	65	71	66	69	Yes	Yes	6
	053-0053-011	38	65	71	66	69	Yes	Yes	6
	053-0053-012	28	65	72	66	69	Yes	Yes	6
Laurie Way	053-0053-124	69	65	70	66	69	Yes	Yes	6
	053-0053-125	89	65	69	66	69	Yes	Yes	6
	053-0053-126	79	65	69	66	69	Yes	Yes	6
	053-0053-127	53	65	71	66	69	Yes	Yes	6
	053-0053-128	64	65	70	66	69	Yes	Yes	6
	053-0064-001	64	65	70	66	69	Yes	Yes	6
	053-0064-002	64	65	70	66	69	Yes	Yes	6
	053-0064-003	67	65	70	66	69	Yes	Yes	6
	053-0064-004	70	65	70	66	69	Yes	Yes	6
	053-0064-005	68	65	70	66	69	Yes	Yes	6
053-0064-006	78	65	69	66	69	Yes	Yes	6	

Table 3.7-4 (Con't)
Projected Noise Impacts at Residences due to LRT Operations (Design Option B)

Residence Location	APN	Residence Distance from Closest LRT Track Centerline (feet)	Exist Noise (dBA)	Noise With Project (dBA)	FTA Impact Threshold (dBA)		Threshold Exceeded?		Height of Sound Wall Required (feet)
					Moderate	Severe	Moderate	Severe	
Reel Circle	053-0064-007	98	65	69	66	69	Yes	--	6
	053-0064-008	104	65	68	66	69	Yes	--	6
	053-0064-010	52	65	71	66	69	Yes	Yes	6
	053-0064-011	33	65	73	66	69	Yes	Yes	6
	053-0064-012	80	65	69	66	69	Yes	Yes	6
	053-0074-003	66	65	70	66	69	Yes	Yes	6
	053-0074-004	36	65	73	66	69	Yes	Yes	6
	053-0074-005	46	65	72	66	69	Yes	Yes	6
	053-0104-005	36	65	73	66	69	Yes	Yes	6
	053-0104-006	50	65	72	66	69	Yes	Yes	6
	053-0104-007	45	65	72	66	69	Yes	Yes	6
	053-0104-008	50	65	72	66	69	Yes	Yes	6
	053-0104-009	41	65	73	66	69	Yes	Yes	6
	053-0104-042	50	65	72	66	69	Yes	Yes	6
Residences South of Meadowview Road Crossing – West Side (Southbound/Outbound Track)									
Fallis Circle	053-0093-008	70	65	70	66	69	Yes	Yes	6
	053-0093-009	48	65	72	66	69	Yes	Yes	6
	053-0093-010	60	65	71	66	69	Yes	Yes	6
Ann Arbor Way	053-0093-011	70	65	70	66	69	Yes	Yes	6
	053-0141-011	114	65	67	66	69	Yes	--	6
	053-0141-012	73	65	68	66	69	Yes	--	6
	053-0141-013	54	65	69	66	69	Yes	Yes	6
	053-0141-014	61	65	68	66	69	Yes	--	6
	053-0141-015	63	65	68	66	69	Yes	--	6
	053-0141-016	75	65	68	66	69	Yes	--	6
	053-0141-017	89	65	67	66	69	Yes	--	6
	053-0141-018	104	65	67	66	69	Yes	--	6
	053-0141-019	90	65	67	66	69	Yes	--	6
	053-0141-020	59	65	68	66	69	Yes	--	6
Residences South of Meadowview Road Crossing – East Side (Northbound/Inbound Track)									
Andros Way	119-0330-001	100	65	67	66	69	Yes	--	7
	119-0330-066	109	65	67	66	69	Yes	--	7
Leros Court	119-0330-055	113	65	68	66	69	Yes	--	7
	119-0330-054	101	65	68	66	69	Yes	--	7
Lesbos Court	119-0330-044	101	65	68	66	69	Yes	--	7

Table 3.7-4 (Con't)
Projected Noise Impacts at Residences due to LRT Operations (Design Option B)

Residence Location	APN	Residence Distance from Closest LRT Track Centerline (feet)	Exist Noise (dBA)	Noise With Project (dBA)	FTA Impact Threshold (dBA)		Threshold Exceeded?		Height of Sound Wall Required (feet)
					Moderate	Severe	Moderate	Severe	
Samos Way	119-0330-043	103	65	68	66	69	Yes	--	7
	119-0340-015	99	65	68	66	69	Yes	--	7
	119-0340-016	107	65	68	66	69	Yes	--	7
Marshwood Circle	119-0070-047-1	103	65	68	66	69	Yes	--	7
	119-0070-047-2	107	65	68	66	69	Yes	--	7
	119-0070-047-3	96	65	68	66	69	Yes	--	7
	119-0070-047-4	101	65	68	66	69	Yes	--	7
	119-0070-047-5	102	65	68	66	69	Yes	--	7
	119-0070-047-7	99	65	68	66	69	Yes	--	7
	119-0070-047-6	135	65	67	66	69	Yes	--	7
Willowside Circle	119-0070-047-8	106	65	68	66	69	Yes	--	7
	119-0070-047-9	104	65	68	66	69	Yes	--	7
	119-0070-047-10	107	65	68	66	69	Yes	--	7
	119-0070-047-11	101	65	68	66	69	Yes	--	7
	119-0070-047-12	124	65	68	66	69	Yes	--	7
	119-0070-047-13	132	65	67	66	69	Yes	--	7
	119-0070-047-14	100	65	68	66	69	Yes	--	7
Elkwood Circle	119-0070-047-15	104	65	68	66	69	Yes	--	7
	119-0070-047-16	100	65	68	66	69	Yes	--	7
	119-0070-047-17	99	65	68	66	69	Yes	--	7
	119-0070-047-18	102	65	68	66	69	Yes	--	7
	119-0070-047-19	170	65	67	66	69	Yes	--	7
	119-0070-047-20	143	65	67	66	69	Yes	--	7
	119-0070-047-21	105	65	68	66	69	Yes	--	7
Meadow Drive	119-0070-047-22	101	65	68	66	69	Yes	--	7
	119-0070-047-23	102	65	68	66	69	Yes	--	7
	119-0070-047-24	101	65	68	66	69	Yes	--	7
	119-0070-047-25	105	65	68	66	69	Yes	--	7
	119-0070-047-26	103	65	68	66	69	Yes	--	7
	119-0070-047-27	105	65	68	66	69	Yes	--	7
	119-0070-047-28	104	65	68	66	69	Yes	--	7
	119-0070-047-29	100	65	68	66	69	Yes	--	7
	119-0070-047-30	108	65	68	66	69	Yes	--	7

Source: Project consultant team, July, 2011.

- Design Option C:** This design option would differ substantially from the other two design options in that it would remove all of the adjacent residences to the west along the LRT corridor. Thus, the nearest sensitive receptors would become the next row of homes lying further west of those that would be removed. At most locations, the distances from the LRT tracks to the nearest homes would increase substantially from those under Design Options A and B (e.g., the closest residence to the LRT track would now be 66 feet compared to 20 feet and 28 feet under Options A and B, respectively) because a local residential street would separate the LRT tracks and the homes to the west. Noise impacts under Design Option C would be correspondingly lessened. Nevertheless, there would still be Moderate Impacts at all the western residences and Severe Impacts at about half of them, as shown below in Table 3.7-5. A four-foot wall close to the nearest LRT track would still be required mitigate the increase in noise below Moderate Impact levels.

On the east side of the corridor, the distance from the LRT tracks to the residences would increase substantially, varying between 150 and 250 feet. This increase in distance would lead to a corresponding decrease in noise levels experienced by sensitive receptors on the east side of the corridor. However, LRT-related noise would still be just high enough in most cases to be considered a Moderate Impact under FTA criteria, as shown in Table 3.7-5, and a six-foot property-line wall would still be required on the east side to mitigate the increase in noise to below Moderate Impact levels.

Installation of the sound walls as recommended would mitigate the increase in noise below the FTA Moderate Impact criteria and keep resultant noise levels within the General Plan's Conditionally Acceptable range. With the implementation of this mitigation, the option's impacts under CEQA would be less than significant.

**Table 3.7-5
Projected Noise Impacts at Residences due to LRT Operations (Design Option C)**

Residence Location	APN	Residence Distance from Closest LRT Track Centerline (feet)	Exist Noise (dBA)	Noise With Project (dBA)	FTA Impact Threshold (dBA)		Threshold Exceeded?		Height of Sound Wall Required (feet)
					Moderate	Severe	Moderate	Severe	
Residences South of Meadowview Road Crossing – West Side (Southbound/Outbound Track)									
Jola Circle	053-0053-006	82	59	66	63	67	Yes	Yes	4
	053-0052-006	130	59	63	63	67	Yes	--	4
	053-0052-007	130	59	63	63	67	Yes	--	4
	053-0053-014	144	59	63	63	67	Yes	--	4
Laurie Way	053-0053-023	120	59	66	63	67	Yes	Yes	4
	053-0055-007	192	59	63	63	67	Yes	--	4
	053-0055-003	178	59	64	63	67	Yes	--	4

Table 3.7-5 (Con't)
Projected Noise Impacts at Residences due to LRT Operations (Design Option C)

Residence Location	APN	Residence Distance from Closest LRT Track Centerline (feet)	Exist Noise (dBA)	Noise With Project (dBA)	FTA Impact Threshold (dBA)		Threshold Exceeded?		Height of Sound Wall Required (feet)
					Moderate	Severe	Moderate	Severe	
Reel Circle	053-0055-004	178	59	64	63	67	Yes	--	4
	053-0063-002	169	59	64	63	67	Yes	--	4
	053-0063-003	166	59	64	63	67	Yes	--	4
	053-0063-004	167	59	64	63	67	Yes	--	4
	053-0063-005	171	59	64	63	67	Yes	--	4
	053-0063-006	173	59	64	63	67	Yes	--	4
	053-0063-007	182	59	64	63	67	Yes	--	4
	053-0063-008	189	59	64	63	67	Yes	--	4
	053-0063-009	203	59	63	63	67	Yes	--	4
	053-0063-010	221	59	63	63	67	Yes	--	4
	053-0064-009	95	59	67	63	67	Yes	Yes	4
	053-0064-013	124	59	65	63	67	Yes	Yes	4
	053-0064-014	142	59	65	63	67	Yes	Yes	4
	053-0074-002	108	59	66	63	67	Yes	Yes	4
	053-0074-006	86	59	68	63	67	Yes	Yes	4
	053-0104-003	118	59	66	63	67	Yes	Yes	4
	053-0106-007	144	59	65	63	67	Yes	Yes	4
	053-0106-008	144	59	65	63	67	Yes	Yes	4
	053-0106-009	140	59	65	63	67	Yes	Yes	4
	053-0104-011	85	59	68	63	67	Yes	Yes	4
Fallis Circle	053-0093-007	99	59	67	63	67	Yes	Yes	4
	053-0095-006	153	59	64	63	67	Yes	--	4
	053-0095-007	178	59	64	63	67	Yes	--	4
	053-0095-008	217	59	63	63	67	Yes	--	4
	053-0093-013	77	59	68	63	67	Yes	Yes	4
Residences South of Meadowview Road Crossing – West Side (Southbound/Outbound Track)									
Ann Arbor Way	053-0093-014	108	59	66	63	67	Yes	Yes	4
	053-0141-010	128	59	63	63	67	Yes	--	4
	053-0141-011	66	59	66	63	67	Yes	Yes	4
	053-0142-010	168	59	62	63	67	Yes	--	4
	053-0142-009	174	59	62	63	67	Yes	--	4
	053-0141-017	69	59	66	63	67	Yes	Yes	4
	053-0141-018	88	59	65	63	67	Yes	Yes	4

Table 3.7-5 (Con't)
Projected Noise Impacts at Residences due to LRT Operations (Design Option C)

Residence Location	APN	Residence Distance from Closest LRT Track Centerline (feet)	Exist Noise (dBA)	Noise With Project (dBA)	FTA Impact Threshold (dBA)		Threshold Exceeded?		Height of Sound Wall Required (feet)
					Moderate	Severe	Moderate	Severe	
Residences South of Meadowview Road Crossing – East Side (Northbound/Inbound Track)									
Andros Way	119-0330-001	178	65	66	66	69	Yes	--	6
	119-0330-066	187	65	66	66	69	Yes	--	6
Leros Court	119-0330-055	191	65	67	66	69	Yes	--	6
	119-0330-054	179	65	67	66	69	Yes	--	6
Lesbos Court	119-0330-044	179	65	67	66	69	Yes	--	6
	119-0330-043	181	65	67	66	69	Yes	--	6
Samos Way	119-0340-015	177	65	67	66	69	Yes	--	6
	119-0340-016	185	65	67	66	69	Yes	--	6
Marshwood Circle	119-0070-047-1	181	65	67	66	69	Yes	--	6
	119-0070-047-2	185	65	67	66	69	Yes	--	6
	119-0070-047-3	174	65	67	66	69	Yes	--	6
	119-0070-047-4	179	65	67	66	69	Yes	--	6
	119-0070-047-5	180	65	67	66	69	Yes	--	6
	119-0070-047-7	177	65	67	66	69	Yes	--	6
Willowside Circle	119-0070-047-6	213	65	66	66	69	Yes	--	6
	119-0070-047-8	184	65	67	66	69	Yes	--	6
	119-0070-047-9	182	65	67	66	69	Yes	--	6
	119-0070-047-10	185	65	67	66	69	Yes	--	6
	119-0070-047-11	179	65	67	66	69	Yes	--	6
	119-0070-047-12	202	65	66	66	69	Yes	--	6
Elkwood Circle	119-0070-047-13	210	65	66	66	69	Yes	--	6
	119-0070-047-14	178	65	67	66	69	Yes	--	6
	119-0070-047-15	182	65	67	66	69	Yes	--	6
	119-0070-047-16	178	65	67	66	69	Yes	--	6
Meadow Drive	119-0070-047-17	177	65	67	66	69	Yes	--	6
	119-0070-047-18	180	65	67	66	69	Yes	--	6
	119-0070-047-19	248	65	66	66	69	Yes	--	6
	119-0070-047-20	221	65	66	66	69	Yes	--	6
	119-0070-047-21	183	65	67	66	69	Yes	--	6
	119-0070-047-22	179	65	67	66	69	Yes	--	6
	119-0070-047-23	180	65	67	66	69	Yes	--	6
	119-0070-047-24	179	65	67	66	69	Yes	--	6
	119-0070-047-25	183	65	67	66	69	Yes	--	6
	119-0070-047-26	181	65	67	66	69	Yes	--	6

Table 3.7-5 (Con't)
Projected Noise Impacts at Residences due to LRT Operations (Design Option C)

Residence Location	APN	Residence Distance from Closest LRT Track Centerline (feet)	Exist Noise (dBA)	Noise With Project (dBA)	FTA Impact Threshold (dBA)		Threshold Exceeded?		Height of Sound Wall Required (feet)
					Moderate	Severe	Moderate	Severe	
	119-0070-047-27	183	65	67	66	69	Yes	--	6
	119-0070-047-28	182	65	67	66	69	Yes	--	6
	119-0070-047-29	178	65	67	66	69	Yes	--	6
	119-0070-047-30	186	65	67	66	69	Yes	--	6

Source: Project consultant team, July, 2011.

Noise barriers are the most common means of controlling noise from rail transportation systems. The primary requirements for an effective noise barrier are: 1) the barrier must be high enough and long enough to break the line-of-sight between the sound source and the receiver; 2) the barrier must be of an impervious material with a minimum surface density of four pounds per square foot; and 3) the barrier must not have any gaps or holes along its length or at the bottom. The primary noise source on LRT vehicles is the steel wheels rolling on steel rails (wheel/rail noise). This source is located close to the ground, which means that relatively low barriers can be effective at controlling the LRT noise if they are placed close enough to the tracks. Typical barriers to control LRT noise are four to eight feet high, depending on the distance of the barrier from the track.

Based on the results of barrier attenuation analysis performed using FTA methodology, under Design Option A, seven-foot-high property-line noise walls would be required for the residences on the west and east sides of the corridor to mitigate the predicted LRT operational noise impacts. The locations and lengths proposed for these walls are shown in Figure 3.7-4. Design Option B would require six-foot-high walls along the west side and seven-foot-high walls along the east side property lines along the same frontages. Design Option C would require four-foot-high walls along the west side and six-foot-high walls along the east side property lines along the same frontages. Mitigation requiring sound barriers along the corridor was provided in the SFEIS/SFEIR as Mitigation Measure N&V-1. The requirements of this measure would still apply to the implementation of Alternative 2, although the heights of the sound walls would be different because of the change in the alignment proposed by Design Options A, B, and C. Installation of the sound walls at the recommended heights and locations would mitigate the increase in noise below the FTA Moderate Impact criteria and would keep resultant noise levels within the General Plan's Conditionally Acceptable range. With the implementation of this mitigation the option's impacts under CEQA would be less than significant.

Since adoption of the SFEIS/SFEIR in 2008, an alternative noise reduction measure has been investigated by RT that could possibly eliminate the need for soundwalls on the east side of the

UPRR corridor. The principal noise source from LRT operations is the interface between the wheels and the tracks. Design changes that could lessen the level of noise produced at this interface could provide a substantial benefit noise reduction for overall LRT operations. The specific measures include the installation of vibration dampers on the rails and the grinding of tracks to provide a smoother surface. Tests with vibration dampers attached to rails that were performed in June 2009 showed the potential to reduce wayside noise levels by 3 decibels.¹ Additional tests that were performed before and after the rails were ground to provide a smooth surface at the wheel/rail interface indicated that up to an additional 5 dB of noise reduction may be achieved with a carefully designed and monitored rail grinding program and that the total reduction achieved with a rail grinding program plus rail dampers could be as high as 8 decibels.² RT plans to perform additional tests to confirm the results of the previous tests.

The testing demonstrates the potential for a combination of rail damping and rail grinding to lessen noise generation so that the heights of the sound walls could be reduced or even eliminated at some locations. This finding could be applicable to the sound wall proposed for the east side of the UPRR corridor, where predicted noise levels exceed the FTA thresholds by only a marginal amount. Since this method of noise reduction is only in the testing stages but nevertheless holds promise for substantially reducing noise at lesser cost to the project and lesser disruption to the community during construction, it is reasonable to include it in this IS/EA as an alternative mitigation measure to sound walls, providing that certain standards for noise abatement (i.e., those stipulated by FTA and the City of Sacramento General Plan) are achieved and a program is put into place to monitor the effectiveness of the mitigation and to prescribe followup actions if the mitigation is found to not meet the required standards. Accordingly, the following alternative mitigation measure is proposed to lessen noise impacts in lieu of sound walls at appropriate locations. The mitigation measure provided below is in addition to all other noise mitigation measures already prescribed in the SFEIS/SFEIR. The number of the measure is set forth here as N&V-7 since the SFEIS/SFEIR already prescribed mitigation measures N&V-1 through N&V-6.

N&V-7 Where appropriate, in lieu of the recommended sound walls, Sacramento Regional Transit shall install rail dampers and implement a maintenance program of rail grinding to lessen noise emissions from the LRT wheel/rail interface. Components of the program shall include, but not necessarily be limited to, the following:

1. Wheel truing: Regular inspection of wheels and truing of wheels that are out of specifications to ensure that rough wheels do not lead to increased noise levels;
2. Rail grinding contract: A multi-year contract for rail grinding that includes annual grinding on an as-needed basis;

¹ Field Testing of Rail Dampers. Memorandum prepared by ATS Consulting for Sacramento Regional Transit, August 20, 2009.

² Draft Report: Noise Reduction Achieved with Rail Grinding. Memorandum prepared by ATS Consulting for Sacramento Regional Transit, April 20, 2011.

3. Grinding specification: All rail grinding shall comply with a specification that includes limits on surface roughness;
4. Verification measurements: Post-grinding measurements that verify that the rails meet the grinding specification. This step along with Step 3 shall be performed to provide RT with assurance that the grinding is performed correctly and to allow for competitive bidding;
5. Permanent monitoring and prioritization program: The permanent monitoring program shall be designed to determine when noise levels start to increase on a section of track and to prioritize the annual grinding. Once a baseline is established for each segment of track, track sections in need of grinding shall be prioritized in the grinding program;
6. Rail dampers: In addition to rail grinding, rail dampers may be utilized to achieve program objectives in noise-sensitive areas.

These in-lieu measures shall be designed to achieve the FTA Moderate Impact criteria. If attenuation below these levels cannot be confirmed, then Sacramento Regional Transit shall implement the sound wall mitigation as specified in the Phase 2 SFEIS/SFEIR as designed to achieve the FTA Moderate Impact criteria. Confirmation that this alternative mitigation program is effective will be based on a preliminary monitoring effort. For a period of not less than two years, noise measurements shall be taken on a biannual basis at appropriate locations along the alignment. If the FTA Moderate Impact criteria are exceeded during two successive monitoring cycles, or if the program is otherwise demonstrated to be less than effective in meeting these criteria, then the sound wall mitigation specified in the Phase 2 SFEIS/SFEIR shall be implemented.

TPSS #10 Relocation. TPSS #10 would be relocated as part of the proposed project. A TPSS can include mechanical equipment (e.g., ventilation fans, etc.) that generates noise. TPSS #10 would be subject to the exterior noise standards of the Sacramento Noise Ordinance, Section 8.68.060. Thus, it would be required to reduce noise from mechanical equipment by proper siting and selection of equipment, and/or through installation of sufficient acoustical shielding or noise emission controls to assure that TPSS noise does not audibly increase local background levels at nearby sensitive receptors (as verified by acoustical analysis after the equipment is installed). TPSS compliance with the Noise Ordinance would assure that its noise impacts would not exceed FTA criteria. Therefore, the impact under CEQA would be less than significant.

NOI-2. Excessive Increase in Vibration per CEQA and FTA Criteria

Alternative 1 – No Project. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. Vibration measurements and modeling conducted for the SFEIS/SFEIR determined that the vibration

impacts would occur at several of the residences to the west of the corridor where LRT vibration levels would exceed the FTA general assessment criteria (see Table 3.7-2). Further analysis based on FTA detailed assessment criteria involving the frequency spectrum of the predicted vibrations defined the type and degree of mitigation needed to eliminate the vibration impacts. The SFEIS/SFEIR determined that mitigation consisting of appropriate treatments under the LRT track bed would lessen the impacts to acceptable levels. With the implementation of this mitigation, the SFEIS/SFEIR determined that the project's effects would not exceed the FTA's assessment criteria for vibration impacts. Therefore, the impacts under CEQA would be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously adopted Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. Updated vibration tests were conducted along the UPRR corridor in January 2011 to recognize that the alignment modifications proposed by Alternative 2 would bring LRT operations closer to existing residences and raise concerns over vibration effects. These measurements were used to predict the level of ground-borne vibration likely to be experienced by sensitive receptors as a result of the proposed modifications along the UPRR corridor. The predictions of ground-borne vibration followed FTA methodology for a detailed vibration analysis using vibration propagation characteristics for the corridor segment based on the on-site testing conducted in January 2011. Potential vibration levels from the proposed realignment of the tracks within the UPRR corridor were evaluated at the locations of the adjacent residences along the corridor.

- **Design Option A:** Residences along the west and east sides of the alignment are listed in Table 3.7-6, together with the predicted vibration levels from light rail operations under Design Option A and comparisons with the FTA impact criteria. Since Design Option A would place the LRT tracks closer to sensitive receptors than either of the other design options, Design Option A would be the worst-case scenario for vibration impacts. The prediction modeling showed that at train speeds of 53 mph and 39 mph (which are characteristic of the full operational speed of the light rail trains in mid-corridor and the constrained speeds at either end of the corridor due to roadway and creek overcrossings) residences would need to be located within 35 feet and 30 feet, respectively, from the future near track before vibration impacts would occur. All of the residences on the east side of the corridor are more than 35 feet away from the LRT tracks regardless of which design option is selected. Thus, none of the residences east of the LRT tracks are within this zone of potential vibration impact, and none would require mitigation. As shown in Table 3.7-6, there are nine residences west of the future southbound LRT tracks where vibration levels could exceed the FTA detailed assessment criteria. Mitigation would be needed to reduce vibration levels at these receptor locations.

Table 3.7-6
Projected Vibration Impacts at Residences due to LRT Operations within the UPRR Corridor
(Option A)

Residential Location	APN	LRT Speed (mph)	Distance to Track (feet)	Predicted	FTA Threshold ^b (VdB)	FTA Criteria Impacts?	Amount Exceeds ^c	Mitigation Required? ^d
				Vibration Level ^a (VdB)				
Residences South of Meadowview Road Crossing – West Side (Southbound Track)								
Jola Circle	053-0053-007	39	55	70	72	--	--	--
	053-0053-008	39	25	79	72	Yes	7.2	Yes
	053-0053-009	39	29	77	72	Yes	5.5	Yes
	053-0053-010	39	27	78	72	Yes	6.4	Yes
	053-0053-011	39	27	78	72	Yes	6.5	Yes
	053-0053-012	39	17	83	72	Yes	11.3	Yes
Laurie Way	053-0053-124	53	58	72	72	--	0.5	--
	053-0053-125	53	78	69	72	--	--	--
	053-0053-126	53	68	71	72	--	--	--
	053-0053-127	53	42	76	72	Yes	4.1	--
	053-0053-128	53	53	73	72	Yes	1.4	--
	053-0064-001	53	53	74	72	Yes	1.5	--
	053-0064-002	53	53	73	72	Yes	1.4	--
	053-0064-003	53	56	73	72	Yes	0.9	--
	053-0064-004	53	59	72	72	Yes	0.2	--
	053-0064-005	53	57	73	72	Yes	0.6	--
	053-0064-006	53	67	71	72	--	--	--
	053-0064-007	53	87	68	72	--	--	--
	053-0064-008	53	93	67	72	--	--	--
	053-0064-010	53	41	76	72	Yes	4.3	--
	053-0064-011	53	22	83	72	Yes	11.3	Yes
	053-0064-012	53	69	71	72	--	--	--
	053-0074-003	53	55	73	72	Yes	1.1	--
	053-0074-004	53	25	82	72	Yes	9.7	Yes
	053-0074-005	53	35	78	72	Yes	6.0	--
Reel Circle	053-0104-005	53	25	82	72	Yes	9.8	Yes
	053-0104-006	53	39	77	72	Yes	4.9	--
	053-0104-007	53	34	78	72	Yes	6.3	--
	053-0104-008	53	39	77	72	Yes	4.7	--
	053-0104-009	53	30	80	72	Yes	7.7	Yes
	053-0104-042	53	39	77	72	Yes	4.8	--
Fallis Circle	053-0093-008	53	59	72	72	Yes	0.3	--
	053-0093-009	53	37	78	72	Yes	5.5	--
	053-0093-010	53	49	74	72	Yes	2.3	--
	053-0093-011	53	59	72	72	Yes	0.2	--
Ann Arbor Way	053-0141-011	35	103	62	72	--	--	--
	053-0141-012	35	62	68	72	--	--	--
	053-0141-013	35	43	72	72	Yes	0.1	--
	053-0141-014	35	50	71	72	--	--	--
	053-0141-015	35	52	70	72	--	--	--
	053-0141-016	35	63	68	72	--	--	--

Table 3.7-6 (Con't)
Projected Vibration Impacts at Residences due to LRT Operations within the UPRR Corridor
(Option A)

Residential Location	APN	Predicted			FTA Threshold ^b (VdB)	FTA Criteria Impacts?	Amount Exceeds ^c	Mitigation Required? ^d
		LRT Speed (mph)	Distance to Track (feet)	Vibration Level ^a (VdB)				
	053-0141-017	35	78	66	72	--	--	--
	053-0141-018	35	93	64	72	--	--	--
	053-0141-019	35	79	65	72	--	--	--
	053-0141-020	35	48	71	72	--	--	--

Source: Project consultant team, July, 2011.

Notes:

- Predicted vibration velocity level in VdB in living spaces inside residences. The predicted levels are rounded to the nearest decibel.
- FTA impact threshold for a general impact assessment.
- The amount that the predicted vibration levels exceed the general assessment threshold.
- Vibration mitigation is indicated for these receptors.

Design Option A also provides for the installation of a crossover switch along this portion of the alignment. The movement of LRT vehicles over crossovers can result in vibration effects within the immediate vicinity. However, proper siting of these components can avoid vibration impacts. The location proposed for the crossover is adjacent to a large triangular parcel of vacant land that is currently owned by UPRR that would be acquired by RT as part of the Phase 2 project (see Figure 2-3 for the approximate location of the crossover switch). This location allows for a distance of over 225 feet from the proposed crossover location to the nearest sensitive receptor. Modeling of the predicted vibration levels of the switch found that if spring switching mechanisms were utilized, the switch would only need to be placed a minimum of 40 feet from the nearest sensitive receptor to eliminate potential vibration impacts to adjacent residences. If non-spring standard switches were utilized, a minimum distance of only 110 feet would be required. Based on the crossover's proposed location and its distance from the nearest sensitive receptor (approximately 225 feet), none of the residences in the area would be within this zone of potential vibration impact, and mitigation as a result of the crossover's installation would not be required. Therefore, the operation of the crossover switch would not surpass FTA assessment criteria. The impact under CEQA would be less than significant.

This design option also includes the installation of an underground sheet pile, a concrete slurry wall, or a similar barrier between the LRT tracks and the existing PG&E natural gas pipeline that is located within the UPRR corridor. The barrier would provide enhanced protection for the pipeline during LRT construction and maintenance activities against accidental damage or rupture. Such precautions are desirable given the heightened concern over pipeline vulnerability and public safety. Furthermore, the barrier would allow PG&E to safely conduct maintenance on its pipeline without affecting LRT operations. If a sheet pile is selected as the appropriate

separation barrier, the installation of the piling would be undertaken with a vibratory hammer. Use of vibratory hammers could affect nearby sensitive receptors if either: 1) the operation takes place in excessively close proximity to the sensitive receptors; or 2) the vibratory hammer is operated at a frequency that could create excessive vibration. The vibration could also potentially affect the adjacent PG&E pipeline.

The predicted ground-borne vibration resulting from sheet pile installation was modeled based on previous measurements for vibratory pile driving (see Appendix D for a detailed description of the analysis and results of the prediction modeling). The modeling determined that sensitive receptors near the UPRR tracks would not be subjected to vibration levels in exceedance of FTA impact thresholds for damage to buildings or annoyance of building occupants. In addition, the vibration from installation of the sheet piling would be temporary and would occur in specific areas along the alignment only for periods of short duration, usually for just a few hours at a time. Therefore, the vibration effects upon sensitive receptors would be negligible and would be less than significant under CEQA.

With respect to the vibration's effect on the PG&E pipeline, a vibration limit of 2 inches per second peak particle velocity (PPV) is commonly used as a conservative threshold to avoid damage to underground structures from steady-state vibration. PPV is defined as the maximum instantaneous peak of the vibratory motion, and is typically used to measure construction-generated vibration since it is related to the stresses experienced by components like pipelines and other structures. Modeling conducted for the sheet pile installation predicted maximum PPV during steady-state operation of the vibratory hammer would be 1.9 inches per second. The PPV could be lessened by adjusting the settings on the vibratory hammer or by digging a trench to start the installation process.

Based on the modeling, the predicted PPV would not exceed applicable standards. Given concerns about pipeline safety, additional actions are recommended to ensure that vibration levels remain below a conservative threshold. The following measure is in addition to those already prescribed in the SFEIS/SFEIR. The number of the measure is set forth here as N&V-8 since the SFEIS/SFEIR already prescribed mitigation measures N&V-1 through N&V-6, and N&V-7 has been previously assigned in this IS/EA. Implementation of this measure would ensure that applicable construction safety standards are met and that the project's impact in this regard would be negligible and less than significant under CEQA.

N&V-8 Prior to use of vibratory hammers, initial trenching shall be conducted to minimize vibration during the preliminary installation of sheet piling. Before initiating the pile driving, the contractor shall submit a vibration monitoring plan to the Resident Engineer and have the plan approved by the Resident Engineer. Monitoring shall occur on a continual basis during the use of vibratory hammer equipment whenever activities are occurring within 50 feet of the PG&E pipeline. If the monitoring determines that

thresholds are likely to be exceeded, all vibration-producing operations must stop until it can be ensured that construction may commence without exceeding applicable safety standards. Monitoring results shall be recorded hourly in a log and be available at the work site for inspection by the Resident Engineer, project managers, construction supervisors, PG&E representatives, and other appropriate personnel.

- **Design Option B:** Table 3.7-7 shows the predicted vibration levels from light rail operations under Design Option B and comparisons with the FTA impact criteria. Under Design Option B, there are two residences west of the future southbound LRT tracks where vibration levels could exceed the FTA detailed assessment criteria and mitigation would be needed. All of the residences on the east side of the corridor are more than 35 feet away from the LRT tracks. Thus, none of the residences east of the LRT tracks are within this zone of potential vibration impact and none would require mitigation.

Table 3.7-7
Projected Vibration Impacts at Residences due to LRT Operations within the UPRR Corridor (Option B)

Residential Location	APN	LRT Speed (mph)	Distance to Track (feet)	Predicted	FTA Threshold ^b (VdB)	FTA Criteria Impacts?	Amount Exceeds ^c	Mitigation Required? ^d
				Vibration Level ^a (VdB)				
Residences South of Meadowview Road Crossing – West Side (Southbound Track)								
Jola Circle	053-0053-007	39	66	68	72	--	--	--
	053-0053-008	39	36	75	72	Yes	3.1	--
	053-0053-009	39	40	74	72	Yes	1.9	--
	053-0053-010	39	38	75	72	Yes	2.6	--
	053-0053-011	39	38	75	72	Yes	2.6	--
	053-0053-012	39	28	78	72	Yes	5.8	Yes
Laurie Way	053-0053-124	53	69	71	72	--		--
	053-0053-125	53	89	68	72	--		--
	053-0053-126	53	79	69	72	--		--
	053-0053-127	53	53	74	72	Yes	1.5	--
	053-0053-128	53	64	71	72	--		--
	053-0064-001	53	64	71	72	--		--
	053-0064-002	53	64	71	72	--		--
	053-0064-003	53	67	71	72	--		--
	053-0064-004	53	70	70	72	--		--
	053-0064-005	53	68	71	72	--		--
	053-0064-006	53	78	69	72	--		--
	053-0064-007	53	98	67	72	--		--
	053-0064-008	53	104	66	72	--		--
	053-0064-010	53	52	74	72	Yes	1.7	--

Table 3.7-7 (Con't)
Projected Vibration Impacts at Residences due to LRT Operations within the UPRR Corridor
(Option B)

Residential Location	APN	LRT Speed (mph)	Distance to Track (feet)	Predicted	FTA Threshold ^b (VdB)	FTA Criteria Impacts?	Amount Exceeds ^c	Mitigation Required? ^d
				Vibration Level ^a (VdB)				
Reel Circle	053-0064-011	53	33	79	72	Yes	6.7	Yes
	053-0064-012	53	80	69	72	--		--
	053-0074-003	53	66	71	72	--		--
	053-0074-004	53	36	78	72	Yes	5.7	--
	053-0074-005	53	46	75	72	Yes	3.0	--
	053-0104-005	53	36	78	72	Yes	5.7	--
	053-0104-006	53	50	74	72	Yes	2.1	--
	053-0104-007	53	45	75	72	Yes	3.2	--
	053-0104-008	53	50	74	72	Yes	2.0	--
	053-0104-009	53	41	76	72	Yes	4.3	--
Fallis Circle	053-0104-042	53	50	74	72	Yes	2.0	--
	053-0093-008	53	70	70	72	--	--	--
	053-0093-009	53	48	75	72	Yes	2.6	--
	053-0093-010	53	60	72	72	Yes	0.0	--
Ann Arbor Way	053-0093-011	53	70	70	72	--	--	--
	053-0141-011	35	114	61	72	--	--	--
	053-0141-012	35	73	66	72	--	--	--
	053-0141-013	35	54	70	72	--	--	--
	053-0141-014	35	61	68	72	--	--	--
	053-0141-015	35	63	68	72	--	--	--
	053-0141-016	35	74	66	72	--	--	--
	053-0141-017	35	89	64	72	--	--	--
	053-0141-018	35	104	62	72	--	--	--
	053-0141-019	35	90	64	72	--	--	--
	053-0141-020	35	59	69	72	--	--	--

Source: RT, 2011.

Notes:

- Predicted vibration velocity level in VdB in living spaces inside residences. The predicted levels are rounded to the nearest decibel.
- FTA impact threshold for a general impact assessment.
- The amount that the predicted vibration levels exceed the general assessment threshold.
- Vibration mitigation is indicated for these receptors.

- **Design Option C.** Table 3.7-8 shows the predicted vibration levels from light rail operations under Design Option C and comparisons with the FTA impact criteria. Under Design Option C, no residences west or east of the future southbound LRT tracks would exceed the FTA detailed assessment criteria and mitigation would not be needed.

Table 3.7-8
Projected Vibration Impacts at Residences due to LRT Operations within the UPRR Corridor
(Option C)

Residential Location	APN	LRT Speed (mph)	Distance to Track (feet)	Predicted	FTA Threshold ^b (VdB)	FTA Criteria Impacts?	Amount Exceeds ^c	Mitigation Required? ^d
				Vibration Level ^a (VdB)				
Residences South of Meadowview Road Crossing – West Side (Southbound Track)								
Jola Circle	053-0053-006	39	82	66	72	--	--	--
	053-0052-006	39	130	61	72	--	--	--
	053-0052-007	39	130	61	72	--	--	--
Laurie Way	053-0053-014	53	144	60	72	--	--	--
	053-0053-023	53	120	62	72	--	--	--
	053-0055-007	53	192	56	72	--	--	--
	053-0055-003	53	178	60	72	--	--	--
	053-0055-004	53	178	60	72	--	--	--
	053-0063-002	53	169	60	72	--	--	--
	053-0063-003	53	166	61	72	--	--	--
	053-0063-004	53	167	61	72	--	--	--
	053-0063-005	53	171	60	72	--	--	--
	053-0063-006	53	173	60	72	--	--	--
	053-0063-007	53	182	60	72	--	--	--
	053-0063-008	53	189	59	72	--	--	--
	053-0063-009	53	203	58	72	--	--	--
	053-0063-010	53	221	58	72	--	--	--
	053-0064-009	53	95	67	72	--	--	--
	053-0064-013	53	124	64	72	--	--	--
	053-0064-014	53	142	62	72	--	--	--
	053-0074-002	53	108	65	72	--	--	--
	053-0074-006	53	86	68	72	--	--	--
Reel Circle	053-0104-003	53	118	65	72	--	--	--
	053-0106-007	53	144	62	72	--	--	--
	053-0106-008	53	144	62	72	--	--	--
	053-0106-009	53	140	63	72	--	--	--
	053-0104-011	53	85	68	72	--	--	--

Table 3.7-8 (Con't)
Projected Vibration Impacts at Residences due to LRT Operations within the UPRR Corridor
(Option C)

Residential Location	APN	LRT Speed (mph)	Distance to Track (feet)	Predicted	FTA Threshold ^b (VdB)	FTA Criteria Impacts?	Amount Exceeds ^c	Mitigation Required? ^d
				Vibration Level ^a (VdB)				
Fallis Circle	053-0093-007	53	99	66	72	--	--	--
	053-0095-006	53	153	62	72	--	--	--
	053-0095-007	53	178	60	72	--	--	--
	053-0095-008	53	217	58	72	--	--	--
	053-0093-013	53	77	69	72	--	--	--
	053-0093-014	53	108	65	72	--	--	--
Ann Arbor Way	053-0141-010	35	128	64	72	--	--	--
	053-0141-011	35	66	71	72	--	--	--
	053-0142-010	35	168	57	72	--	--	--
	053-0142-009	35	174	57	72	--	--	--
	053-0141-017	35	69	67	72	--	--	--
	053-0141-018	35	88	64	72	--	--	--

Source: RT, 2011.

Notes:

- a. Predicted vibration velocity level in VdB in living spaces inside residences. The predicted levels are rounded to the nearest decibel.
- b. FTA impact threshold for a general impact assessment.
- c. The amount that the predicted vibration levels exceed the general assessment threshold.
- d. Vibration mitigation is indicated for these receptors.

Based on the results of the prediction modeling for Design Options A and B, as shown in Table 3.7-6 and Table 3.7-7, several locations along the UPRR corridor would require mitigation to reduce the predicted vibration impacts to acceptable levels based on the FTA criteria. These locations are shown in Figure 3.7-4. The same mitigation strategies provided in the SFEIS/SFEIR for Alternative 1 would also be required for Options A and B of Alternative 2 to reduce vibration impacts to those segments of the corridor where impacts would be likely to occur. The SFEIS/SFEIR determined that mitigation consisting of appropriate treatments under the LRT track bed would lessen the impacts to acceptable levels. Because there are no predicted impacts for Option C, no vibration mitigation would be required for this option. Mitigation for Options A and B would consist of one of the following three options:

- **Tire Derived Aggregate (TDA):** A 30-centimeter layer of TDA placed under the track ballast would effectively reduce LRT vibration components at frequencies of 25 Hz and higher. However, for the project alignment, a thicker layer of TDA may be required to provide sufficient reduction at low frequencies to eliminate the predicted

impact at all residences. The precise thickness of the TDA layer would be determined during final design. The anticipated length of the TDA mitigation is 1,000 feet for Design Option A and 500 feet for Design Option B.

- **Ballast Mats:** A ballast mat consists of a three- to six-centimeter-thick elastomer pad that is placed under the track ballast. Depending on the soil properties, a layer of asphalt or concrete may also be required under the ballast mat to provide additional vibration reduction. However, since the predicted project vibration levels exceed the FTA impact threshold at 63 and 80 Hz by less than 10 VdB, the attenuation provided by a ballast mat alone would probably be sufficient. The precise thickness of the ballast mats would be determined during final design. The anticipated length of the ballast mat mitigation is 1,000 feet for Design Option A and 500 feet for Design Option B.
- **Floating Slab Track:** For a floating slab track, the track is constructed on a concrete slab that is supported by resilient elements. In essence, the track slab “floats” on resilient springs. Most floating slabs in North America use either discrete natural rubber pads eight to 12 inches in diameter or a continuous resilient mat as the resilient element. Other types of resilient elements are used including coil springs. Most floating slab systems use direct fixation track fasteners to attach the track to the slab. An alternative is to construct the floated slab as a “tub” to contain ballast. This would allow using ballast and tie track for all at-grade sections of the Phase 2 Extension project.

The primary drawback of floating slab track is that the construction tends to be very expensive per track foot. As a result, floating slabs are only used where substantial vibration mitigation is needed and less- expensive alternatives are not feasible or would not provide sufficient mitigation. The anticipated length of floating slab track is 500 feet for Design Option A only. Design Option B would not require floating slabs since adequate mitigation would be achievable through the installation of either TDA or ballast mats. Alternative mitigation measures will be investigated during the final design phase of this project to ensure that groundborne vibration levels cannot be achieved with less expensive mitigation measures.

Mitigation requiring the installation of appropriately designed TDAs and/or ballast mats and/or floating slabs in accordance with FTA standards was included in the SFEIS/SFEIR as Mitigation Measure N&V-6. The requirements of this measure would also apply to the implementation of Alternative 2. Following the implementation of this mitigation measure, vibration effects of the project would not exceed applicable FTA vibration impact criteria. Impacts under CEQA would be mitigated to less than significant.

NOI-3. Substantial Temporary Noise Increase

Alternative 1 – No Project. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. The analysis completed for the SFEIS/SFEIR reported that temporary noise would occur during construction phases,

and would include demolition, utilities relocation, grading, and the installation of tracks, LRT systems, stations, and parking areas. Each of these activities would have the potential to create noise impacts that would intrude on residents near the construction sites. However, most of the construction would consist of site preparation and laying new track and would occur during normal daytime hours. Mitigation included within the SFEIS/SFEIR required following general good construction practices, including the use of feasible noise control technology for construction equipment. Based on implementation of these measures, the SFEIS/SFEIR determined that the project's effects would not be exceed FTA noise impact criteria during construction. Impacts under CEQA would be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously adopted Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. The proposed modifications would not significantly alter the overall footprint of the Phase 2 extension previously analyzed in the SFEIS/SFEIR. Similar to Alternative 1, temporary noise would occur during Alternative 2 construction phases, including demolition, utilities relocation, grading, and the installation of tracks, LRT systems, stations, and parking areas. As with Alternative 1, each of these activities would have the potential to create noise impacts that would intrude on residents near the construction sites. However, as described under Alternative 1, most of the construction would consist of site preparation and laying new track and would occur during normal daytime hours. Thus, the same mitigation adopted in the SFEIS/SFEIR would also be implemented under Alternative 2, and would include requirements to follow general good construction practices as well as requirements to include feasible noise control technology for construction equipment. The FTA recommends the following categories of approaches to construction noise mitigation.

Design considerations and project layout:

- Construct noise barriers, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers.
- Re-route truck traffic away from residential streets, if possible. Select streets with fewest homes if no alternatives are available.
- Site equipment on the construction lot as far away from noise-sensitive sites as possible.
- Construct walled enclosures around especially noisy activities or clusters of noisy equipment. For example, shields can be used around pavement breakers and loaded vinyl curtains can be draped under elevated structures.

Sequence of operations:

- Combine noisy operations to occur in the same time period. The total noise level produced will not be significantly greater than the level produced if the operations were performed separately.
- Avoid nighttime activities (as also required by the Sacramento Noise Ordinance). Sensitivity to noise increases during the nighttime hours in residential neighborhoods.

Alternative construction methods:

- Use specially-quieted equipment, such as enclosed air compressors and properly-working mufflers on all engines.
- Select quieter demolition methods, where possible. For example, sawing bridge decks into sections that can be loaded onto trucks results in lower cumulative noise levels than impact demolition by pavement breakers.

With implementation of these types of good construction practices measures, the temporary noise impacts associated with implementation of Alternative 2 would not be adverse under NEPA. Likewise, the impacts under CEQA would be less than significant.

NOI-4. Aircraft Noise

Alternative 1 – No Project. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. The analysis undertaken in the SFEIS/SFEIR reported that aircraft noise (Sacramento Executive Airport is the closest to the project corridor) was a minor contributor to noise levels within the Phase 2 Extension corridor and that this condition would not be affected by implementation of the project. As such, the SFEIS/SFEIR determined that the project's effects would not be applicable to City of Sacramento noise impact criteria. As such, the SFEIS/SFEIR found that the impacts under CEQA would be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously adopted Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. None of the proposed modifications or design options would lead to an increase in aircraft noise or the introduction of new sensitive receptors to an area already affected by aircraft noise. The conditions and effects described in the SFEIS/SFEIR would remain unchanged with implementation of Alternative 2. As such, the implementation of Alternative 2 would not exceed applicable City of Sacramento noise impact criteria. As such, the impacts under CEQA would be less than significant.

3.8 POPULATION, HOUSING, AND SOCIO-ECONOMICS

Introduction

This section discusses the socio-economic characteristics of the City of Sacramento and areas surrounding the proposed Phase 2 Extension project, and describes potential impacts associated with implementation of the project alternatives. Typical issues addressed in this section include the relocation of residences or businesses, property acquisitions, and fiscal impacts. Related information can be found in Section 3.6, Land Use, as well as Section 3.9, Environmental Justice.

Environmental Setting

Population, Housing, and Employment Growth

General demographic information in the project area was obtained from the Sacramento Area Council of Governments (SACOG) and U.S. Census data estimates for the year 2000.¹ The Census tracts directly adjacent to the Phase 2 Extension project alignment were used as the study area for demographic characteristics. Figure 3.8-1 shows the boundaries of the Census tracts that make up the study area for the Phase 2 Extension project area.

Table 3.8-1 presents population, household, and employment characteristics for the Phase 2 Extension project area,² Sacramento County, and the City of Sacramento. As noted in the table, the area surrounding the Phase 2 Extension project area is predicted to experience a higher rate of population growth than the greater City and County of Sacramento metropolitan area.

Table 3.8-1
2000-2030 Population, Housing, and Employment in the Study Area

Study Area	Population				Housing (Dwelling Units)				Employment (Jobs)			
	2000	2030 (projected)	Absolute Change	Percent Change	2000	2030 (projected)	Absolute Change	Percent Change	2000	2030 (projected)	Absolute Change	Percent Change
Total Phase 2 Extension Project Study Area	73,086	135,525	62,439	85%	21,787	44,109	22,322	102%	11,810	25,262	13,452	114%
Sacramento County	1,223,499	1,992,129	768,630	63%	474,814	720,291	245,477	52%	473,211	956,670	483,459	102%
Sacramento City	409,610	621,401	211,791	52%	163,957	216,234	52,277	32%	268,336	457,213	188,877	70%

Source: U.S. Census data.

¹ At the time of preparation of this IS/EA, data were not available for the 2010 census. Therefore, data from the 2000 census was used.

² Note this covers the entire Phase 2 Extension project study area, which includes the smaller study area being evaluated in this IS/EA.

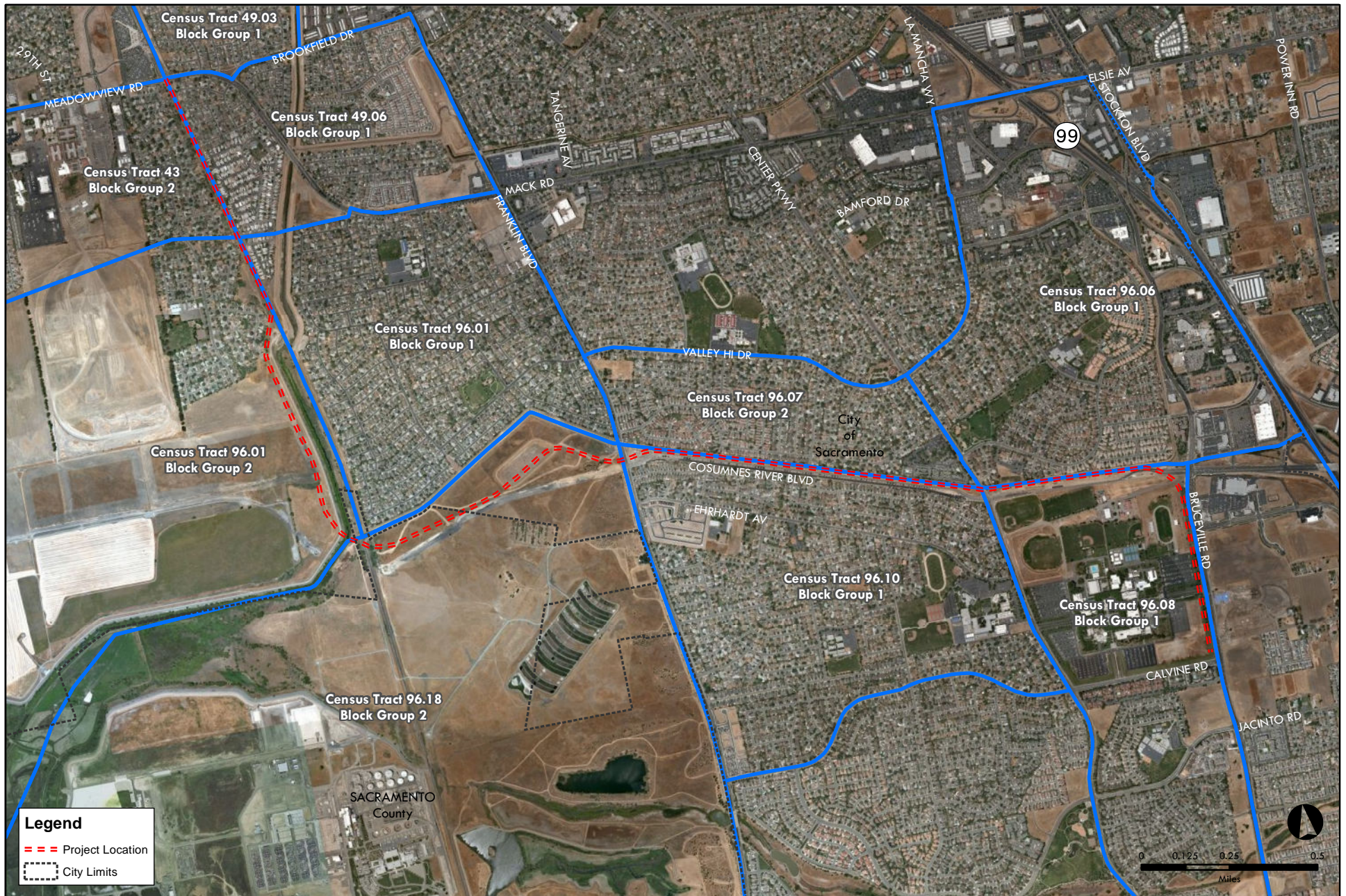


FIGURE 3.8-1
Census Tracts Adjacent to Phase 2 Extension Project Area

100018039

Sacramento Regional Transit District
 South Line Corridor Phase 2 Extension Project IS/EA

Household Characteristics

A household, as defined by the U.S. Census Bureau, is a group of people, related or not, living together in a dwelling unit. Table 3.8-2 compares household characteristics in the study area to those of Sacramento County and the City of Sacramento. In 2000, there were 20,887 households in the study area, with an average household size of 3.50 persons. Eighty-one percent were family households. In contrast, the average household size in the County and City of Sacramento was 2.64 and 2.57 persons per household, respectively, with 66 and 59 percent composed of family households.

Table 3.8-2
Household Characteristics

	No. of Households	Average Household Size	Total No. of Families
Total Phase 2 Extension Project Study Area	20,887	3.50	16,985
Sacramento County	453,602	2.64	297,596
Sacramento City	154,581	2.57	91,137

Source: U.S. Census data.

Transit Dependent Populations

Transit dependent populations are defined as households without private transportation. These individuals rely on public transportation services for access to employment opportunities, school, social/recreational functions, medical appointments, and mobility in general. Table 3.8-3 shows the representation of transit-dependent populations in the study area based on 2000 U.S. Census data. Approximately six percent of the households in the study area are without a private automobile. The study area census tracts in the northern segment of the Phase 2 project corridor have the highest incidence of households without private transportation.

Table 3.8-3
Transit Dependent Populations

	No. of Households	Households without Private Transport	Percent of Households without Private Transport
Total Phase 2 Extension Project Study Area	20,887	1,331	6%
Sacramento County	453,602	39,405	9%
Sacramento City	154,581	19,947	13%

Source: U.S. Census data.

Applicable Policies and Regulations

Property Acquisition Regulations

Acquisition and relocation of any property associated with the proposed project would be required to occur in accordance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and Amendments (Public Law 91-646) and the California Relocation Act (California Government Code, Chapter 16, Section 7260 *et. seq.*) and related laws and regulations. RT has a specific process it follows with regards to acquisitions. These processes are in accordance with the above-noted regulatory requirements and are summarized as follows:

Appraisals. The process by which properties would be acquired would begin with an appraisal of the affected property, followed by an offer to purchase. Appraisals would be made by licensed professional appraisers and would take into consideration a number of factors, included the assessed value of the property and improvements, as well as comparable sales in the general area. Property owners would have the right to appeal and/or counteroffer the appraisal. Following acceptance of the offer, the funds would be transferred to the seller and title to the property would transfer to RT.

Partial Acquisitions. For partial acquisitions, as would be the case where portions of a residential backyard would be acquired, but not the entire parcel, property owners would be paid only for the value of the land acquired. A value would be assigned to the entire parcel of land (not the residence and other improvements). The value of the land would be broken down into a cost per square foot and the owner would be paid that price per square foot for the acquisition. For example, if the total parcel was valued at \$30,000, and the parcel was 10,000 square feet in size, then the value per square foot would be \$3.00 per square foot. If 2,000 square feet of the parcel were acquired for the project, then the value of the acquisition would be \$6,000.

Severance Damages for Substantial Devaluation. In the case of some partial acquisitions, the amount of property acquired may render the remaining portion of the property substantially devalued to a point where compensation for the entire property is warranted, even if the residence and other improvements on the property are not directly impacted. Such could be the case, for example, if the new RT alignment were to require the acquisition of an entire backyard, which could leave the remaining residence on the property substantially devalued and undesirable from the standpoint of future sale. In these situations, severance damages would be offered. Severance damage is a loss in value of the remaining property after acquisition and construction of a project. Severance damages are valued by appraisal of the remaining property as a portion of the total property in the “before” condition and as a remainder in the “after” condition. The remainder is considered damaged if it is worth less after the project’s construction. The payment of severance damages would compensate for the loss in value of the remaining property. In certain cases, this could include payment for the value of the entire property, in which case the property owner would have two options available to them: 1) accept the payment for the acquisition and severance damages and maintain possession of the property; and 2) request a full acquisition of the property and relocate to a replacement residence. If the second option is chosen, the cost of relocation would be borne by RT, subject to certain legal limitations.

Relocation Assistance. Relocation assistance would also apply to property owners affected by full acquisitions. If it is determined that an entire property is necessary to be acquired to implement the project, then the affected property owner would receive payment for the full appraised value of the acquired property as well as relocation assistance.

Relocation assistance to renters would also be provided. Typically, the process begins with interviewing the tenants to gather basic information about their income and household composition. RT would be required to pay relocated renters the difference between their current rent and average replacement rent for a period of 42 months, as well as a moving allowance based on the size of the homes. Once the appropriate documentation has been gathered, the tenants are issued a 90-Day Notice to Vacate along with a Notice of Eligibility for Relocation Assistance. RT and its consultants would then work with the tenants to help them find a suitable replacement dwelling.

Transfer of Proceeds to Property Owners and Lenders. In cases where acquired property is owned free and clear by the property owner (i.e., no mortgage, lien, or other encumbrance), the entire purchase amount would be transferred to the property owner upon transfer of title. In cases where a mortgage or other encumbrance is present on the property, a percentage of the purchase price would be transferred to the lender or lien holder to compensate for the loss in the property's overall secured value, with the balance transferring to the property owner. If the property owner's equity in the property is negative (i.e., the appraised value of the property is less than the amount owed on the property) or is subject to some other substantial encumbrance, then RT would negotiate a short sale with the lending institution or lien holder on the property owner's behalf. In these cases, the property owner would still receive relocation assistance, but the proceeds from the acquisition would transfer to the lending institution and not to the property owner.

Impact Assessment and Mitigation Measures

Standards of Significance

The project alternatives would have an adverse effect on population, housing, and socio-economics if they:

- Induce substantial population growth within an area, either directly or indirectly;
- Displace substantial numbers of existing housing units or people, necessitating the construction of replacement housing elsewhere;
- Reduce employment or otherwise diminish employment opportunities; or
- Substantially reduce local jurisdiction revenues through decreases in property tax revenues or other sources of revenue.

Environmental Analysis

POP-1. Induce substantial population growth

Alternative 1 – No Project. The analysis of impacts related to growth inducement is a requirement of CEQA; there is no comparable federal regulatory requirement. As such, the analysis for this topic relates to CEQA only. Under this alternative, RT would forgo the individual modifications identified in Alternative 2 and implement the Phase 2 Extension project as assessed in the adopted SFEIS/SFEIR. The SFEIS/SFEIR determined that the Phase 2 Extension project would facilitate the City’s planned growth through development of transit-oriented development in the immediate vicinity of the proposed stations. Since the SFEIS/SFEIR determined that the Phase 2 Extension project would not induce unplanned population growth in the region, the implementation of Alternative 1 would result in a less than significant impact under CEQA.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously adopted Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. Implementation of the proposed modifications would not include project components such as new stations that could serve as magnets or catalysts for private and public investment leading to population or employment growth. The proposed track realignments, relocation of a traction power substation, and tailtrack extension are operational improvements and would not attract or stimulate new population, housing, or jobs in the immediate vicinity of these modifications. Therefore, implementation of the proposed modifications identified for Alternative 2 would result in a less than significant impact under CEQA.

POP-2. Displacement of residents and businesses

Alternative 1 – No Project. Under this alternative, RT would forgo the individual modifications identified in Alternative 2 and implement the Phase 2 Extension project as assessed in the adopted SFEIS/SFEIR. This alternative would result in the same property acquisitions and relocations as those described in the SFEIS/SFEIR. The SFEIS/SFEIR determined that two residential units outside of the study area for this IS/EA would be subject to relocation as part of the Phase 2 Extension project, as well as one partial take of a non-residential vacant property within the study area (the IJAZ property). The SFEIS/SFEIR determined that compliance with federal and state laws regarding the taking of private property would minimize the effects of the project, and would therefore not result in an adverse effect. Applicable federal and state requirements include provisions for just compensation, relocation assistance, and other assistance measures, as described previously under “Applicable Policies and Regulations.” Under CEQA, the impact would be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously adopted Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. Each of the proposed modifications is assessed below for their residential displacement effects; there are no businesses in the study area. For purposes of presenting a conservative analysis, properties or easements are assumed to be acquired permanently. During final engineering, RT may determine that some parcels can be leased during construction, avoiding permanent land acquisition impacts. Also, the number of acquisitions and easements required could decrease during final design and engineering, as could the amount of land required from individual parcels. Estimates presented in this section are assumed to represent the “worst case” and are based on preliminary engineering right-of-way documents, which are available for review in RT's offices. The cost of property acquisitions has been included in the project cost estimates. Notably, all property acquisitions for Alternative 2 would be undertaken in accordance with state and federal relocation laws, as discussed above under “Applicable Policies and Regulations.” These laws require compensation to property owners for the full market value of their property and assistance with relocation if their properties and/or residences are affected.

LRT Tracks Adjacent to the UPRR Mainline Tracks. This modification consists of three design options as described in Section 2, Project Alternatives. Impacts associated with each of the options are presented below.

- **Design Option A:** This design option would realign the RT tracks approximately 33 feet westward from the alignment that was assessed in the SFEIS/SFEIR. Under this option, approximately 24 feet of additional ROW beyond that assessed in the SFEIS/SFEIR would be required to accommodate the LRT tracks. Securing this additional ROW would require the partial acquisition of the backyards of 31 residential lots. These acquisitions are summarized below in Table 3.8-3. None of the acquisitions would require the relocation of any residents or the removal of any residences. The partial acquisitions would be undertaken in accordance with applicable state and federal laws. Therefore, the implementation of Alternative 2, Design Option A, would not conflict with applicable federal laws and regulations with respect to residential displacement and private property acquisition. Under CEQA, the project's impacts would be less than significant.
- **Design Option B:** This design option would realign the RT tracks 22 feet westward from the alignment that was assessed in the SFEIS/SFEIR. A railway industry-compliant crash wall would be installed to meet UPRR requirements for track separations that are less than 50 feet. Under this option, approximately 13 feet of additional ROW beyond that assessed in the SFEIS/SFEIR would be required to accommodate the LRT tracks. Securing this additional ROW would require the partial acquisition of the backyards of the same 31 residential lots as identified under Design Option A, although the acreage of acquisition would be less. These acquisitions are summarized below in Table 3.8-3. None of the acquisitions would require the relocation of any residents or the removal of any residences.

The partial acquisitions would be undertaken in accordance with applicable state and federal laws. Therefore, the implementation of Alternative 2, Design Option B, would not conflict with applicable federal laws and regulations with respect to residential displacement and private property acquisition. Under CEQA, the project's impacts would be less than significant.

- **Design Option C:** This design option would realign the RT tracks approximately 70 feet westward from the alignment that was assessed in the SFEIS/SFEIR. Under this option, approximately 50 feet of additional ROW would be required to accommodate the LRT tracks. Securing this additional ROW option would require the full acquisition of 36 residential lots, including the 31 properties affected under Design Options A and B. These acquisitions are summarized below in Table 3.8-4. Thirty-six families would be displaced and require relocation under this option. Thus, the effect of Design Option C would be considerably more severe than that identified for Design Options A and B.

As noted above for Design Options A and B, federal and State laws govern the taking of private property, and include requirements for just compensation, relocation assistance, and other assistance measures. While the impacts from the implementation of Design Option C would be adverse with respect to the affected residents, compliance with these relocation laws would serve to mitigate these impacts. Therefore, the implementation of Alternative 2, Design Option C, would not conflict with applicable federal laws and regulations with respect to residential displacement and private property acquisition. Under CEQA, the project's impacts would be less than significant.

PG&E Natural Gas Pipeline Relocation (Applicable to Design Option B Only). Alternative 2, Design Option B, would avoid the full relocation of the PG&E pipeline along the entire length (approximately one mile) of Detroit Boulevard. Instead, the pipeline would utilize approximately 0.5 miles of Detroit Boulevard and then an existing utility corridor to carry the pipeline east to its reconnection with the existing pipeline. The pipeline relocation to Detroit Boulevard would involve no land acquisition, since it would occur within the public right-of-way. However, use of the existing utility would require seven partial acquisitions and six full acquisitions of remnant backyard parcels. These acquisitions are summarized below in Table 3.8-5, and each would require taking of portions of the backyards on either side of the utility corridor.

None of the acquisitions would require the displacement of residents or the removal of any residences. The acquisitions would be undertaken in accordance with applicable state and federal laws. Therefore, the implementation of Alternative 2, Design Option B, would not conflict with applicable federal laws and regulations with respect to residential displacement and private property acquisition. Under CEQA, the project's impacts would be less than significant.

Table 3.8-4
Property Needed for Realignment of RT Tracks Adjacent to UPRR ROW

Assessor's Parcel Number	Total Size of Parcel (sq ft)	Percentage of Parcel to be Acquired		
		Option A	Option B	Option C
053-0053-007	10,890	11 %	6 %	100 %
053-0053-008	10,019	21 %	12 %	100 %
053-0053-009	7,405	19 %	11 %	100 %
053-0053-010	7,405	19 %	11 %	100 %
053-0053-011	9,148	19 %	11 %	100 %
053-0053-012	14,810	28 %	16 %	100 %
053-0053-024	16,988	10 %	6 %	100 %
053-0053-026	11,326	13 %	8 %	100 %
053-0053-026	10,890	15 %	9 %	100 %
053-0053-027	10,454	15 %	9 %	100 %
053-0053-028	10,019	16 %	9 %	100 %
053-0064-001	9,583	16 %	9 %	100 %
053-0064-002	10,019	16 %	9 %	100 %
053-0064-003	10,019	16 %	9 %	100 %
053-0064-004	10,019	16 %	9 %	100 %
053-0064-005	10,454	15 %	9 %	100 %
053-0064-006	11,326	14 %	8 %	100 %
053-0064-007	12,197	13 %	8 %	100 %
053-0064-008	10,890	14 %	8 %	100 %
053-0064-010	13,068	14 %	8 %	100 %
053-0064-011	13,504	27 %	16 %	100 %
053-0064-012	12,632	7 %	4 %	100 %
053-0074-003	13,504	11 %	6 %	100 %
053-0074-004	10,890	31 %	18 %	100 %
053-0074-005	17,860	18 %	10 %	100 %
053-0104-005	6,098	44 %	24 %	100 %
053-0104-006	7,841	18 %	10 %	100 %
053-0104-007	12,197	12 %	7 %	100 %
053-0104-008	7,405	19 %	11 %	100 %
053-0104-009	7,841	31 %	18 %	100 %
053-0101-042	23,750	12 %	7 %	100 %
053-0104-004	6,098	None	None	100 %
053-0104-012	7,841	None	None	100 %
053-0141-011	9,148	None	None	100 %
053-0141-012	10,019	None	None	100 %
053-0141-013	7,841	None	None	100 %

Source: Sacramento Regional Transit District, December 2010.

Table 3.8-5
Property Needed for PG&E Gas Pipeline Relocation
(Applicable to Design Option B only)

Assessor's Parcel Number	Total Size of Parcel (sq ft)	Amount of Take (sq ft)	Percent of Parcel to be Acquired ^a
053-0104-040	12,440	3,050	25 %
053-0101-041	18,950	5,772	30 %
053-0093-026	8,984	2,337	26 %
053-0093-008	10,454	1,177	11 %
053-0093-009	11,761	4,014	34 %
053-0093-010	8,276	2,590	31 %
053-0093-011	9,583	889	9 %
053-0104-037	5,619	5,619	100 %
053-0104-035	3,049	3,049	100 %
053-0104-031	941	941	100 %
053-0104-032	3,075	3,075	100 %
053-0104-028	649	649	100 %
053-0104-027	183	183	100 %
053-0104-026	6,534	6,534	100 %

Source: Sacramento Regional Transit District, December 2010.

Note:

- a. Note that seven parcels would need to be acquired in full (i.e., 100 percent). However, each of these parcels consist of remnant backyard parcels that were left over from the area's original subdivision. None of these parcels contain residences or other habitable structures.

Morrison Creek Levee Setback. Alternative 2 includes a minor realignment of the LRT tracks in the vicinity of the Morrison Creek levee to an alignment that is greater than 50 feet from the landside toe of the levee. Securing this additional ROW would require the partial acquisition of small portions of two residential parcels, and the effects would be restricted to their backyards. These acquisitions are summarized below in Table 3.8-6. None of the acquisitions would require the relocation of any residents or the removal of any residences. The partial acquisitions would be undertaken in accordance with applicable state and federal laws. Therefore, the implementation of this component of Alternative 2 would not conflict with applicable federal laws and regulations with respect to residential displacement and private property acquisition. Under CEQA, the project's impacts would be less than significant.

Table 3.8-6
Property Needed for Adjustment of RT Alignment
Adjacent to Morrison Creek Levee

Assessor's Parcel Number	Total Size of Parcel (sq ft)	Amount of Take (sq ft)	Percent of Parcel to be Acquired
053-0141-016	8,712	126	1 %
053-0141-020	6,970	98	1 %

Source: Sacramento Regional Transit District, December 2010.

TPSS #10 Relocation. Alternative 2 would relocate the TPSS across Franklin Boulevard to the IJAZ property (Assessor's Parcel Number 117-0131-021). This parcel is vacant and was previously identified as a partial acquisition under Alternative 1 for the placement of other components of the Phase 2 project. Under Alternative 2, a full acquisition of the IJAZ property (75,158 square feet) would be required, whereas only a partial acquisition was required under Alternative 1. Since the parcel is currently vacant, the acquisition would not require the relocation of any residents or businesses. The acquisition would be undertaken in accordance with applicable state and federal laws. Therefore, the implementation of this component of Alternative 2 would not conflict with applicable federal laws and regulations with respect to residential displacement and private property acquisition. Under CEQA, the project's impacts would be less than significant.

Tailtrack Extension at Cosumnes River College. This modification would take place on the CRC campus adjacent to a parking lot on a parcel that has already been designated for use by the Phase 2 project. The modification would extend the tailtracks further into this parcel and would not alter the planned uses for the area. There are no residences or businesses located on the parcel. Therefore, implementation of this component of Alternative 2 would have no effect with respect to residential displacement or private property acquisition. Under CEQA, there would be no impact as a result of the modification.

Summary of Displacement and Acquisition Effects. Nearly all of Alternative 2's components would require some amount of property acquisition. A summary of the required acquisitions is provided below in Table 3.8-7. The acquisitions would include a mix of both full and partial acquisitions, depending upon which design option is chosen. Some of the full acquisitions would require relocation of existing residents, and some of the partial acquisitions could substantially devalue the affected properties to a point where compensation for the full value of the property would be warranted.

Table 3.8-7
Summary of Acquisitions Needed for Implementation of Alternative 2

Modification	Number of Partial Acquisitions	Number of Full Acquisitions
LRT Tracks Adjacent to the UPRR Mainline Tracks	-	-
Design Option A ^a	31	None
Design Option B	31	None
Design Option C ^a	None	36
PG&E Natural Gas Pipeline Relocation (applicable to Design Option B only) ^a	7	6
Morrison Creek Levee Setback	2	None
TPSS #10 Relocation	None	1
Tailtrack Extension at Cosumnes River College	None	None

Source: Sacramento Regional Transit District, February 2011.

Note:

- a. Note that under Design Options A and C, none of the acquisitions identified for the PG&E Natural Gas Pipeline Relocation would be required.

Federal and State laws and regulations govern the acquisition of private property, and include requirements for just compensation, relocation assistance, and other assistance measures. Compliance with these requirements is intended to mitigate the effects that a project could have to affected property owners, at least from a financial perspective. Relocation assistance and other programs are intended to mitigate the other costs that would result from displacement for those residents for whom full acquisition is required. Based on these considerations, and compliance with applicable regulations, the effect of the project with regards to acquisitions and displacements would be effectively mitigated. The project would not conflict with applicable federal laws and policies with respect to residential displacement and the acquisition of private property. Under CEQA, the impact would be less than significant.

POP-3. Employment Effects

Alternative 1 – No Project. Under this alternative, RT would forgo the individual modifications identified in Alternative 2 and implement the Phase 2 Extension project as assessed in the adopted SFEIS/SFEIR. The SFEIS/SFEIR determined that the Phase 2 Extension project would result in beneficial effects on the local and regional economy associated with increased accessibility and mobility. The Phase 2 Extension project would also increase connectivity and improve travel times between neighborhoods and businesses within the corridor as well as develop linkages with neighborhoods and employment locations system wide. Based on these findings, implementation of Alternative 1 would have a beneficial effect with regards to employment. The impact under CEQA would be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously adopted Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. These modifications would not change the overall operation of the project and the likely effect that the Phase 2 Extension project would have on local and regional employment. None of the property acquisitions associated with Alternative 2 include places of business, so there would be no direct effect to places of employment. All of the same benefits that would be realized with the implementation of Alternative 1, such as increased public mobility and enhanced connectivity, would also be realized with the implementation of Alternative 2. Therefore, implementation of Alternative 2 would have a beneficial effect with regards to employment. The impact under CEQA would be less than significant.

POP-4 Fiscal Effects

Alternative 1 – No Project. Under this alternative, RT would forgo the individual modifications identified in Alternative 2 and implement the Phase 2 Extension project as assessed in the adopted SFEIS/SFEIR. Therefore, implementation of this alternative would result in the same fiscal effects as that described in the SFEIS/SFEIR. The SFEIS/SFEIR determined that two residential units outside of the study area for this IS/EA would be subject to relocation as part of the Phase 2 Extension project, as well as one partial take of a non-residential vacant property within the study area (the IJAZ property). The loss of property tax revenues associated with these properties would be minimal, especially when compared to the larger economic benefits that would be provided by the overall Phase 2 Extension project. Therefore, implementation of Alternative 1 would not create an adverse effect with regards to fiscal effects. The impact under CEQA would be less than significant.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously adopted Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. Several of the proposed modifications would require acquisitions of private property adjacent to the modified alignment. These acquisitions are identified above in Table 3.8-2 through Table 3.8-4 and are discussed more fully under Impact POP-2. The number and type of acquisitions for each project component are summarized above in Table 3.8-5. The realignment of the RT tracks to achieve the separation desired by UPRR would have the greatest affect on land acquisition: Design Options A and B would require acquisition of portions of the backyards of 31 residential properties; Design Option C would require full acquisition of 36 residential properties.

Partial Acquisitions. If Design Option A were implemented, the total number of partial acquisitions would be 33. This number includes all of the acquisitions required for the revised alignment adjacent to the UPRR mainline tracks and the revised alignment near the Morrison Creek levee. Under this design option, the PG&E natural gas pipeline would not need to be relocated, therefore eliminating the need for the seven partial acquisitions required for that component of the project.

If Design Option B were implemented, the total number of partial acquisitions would be 40. This number includes all of the acquisitions required for the revised alignment adjacent to the UPRR mainline tracks, the PG&E pipeline relocation, and the revised alignment near the Morrison Creek levee.

If Design Option C were implemented, only two partial acquisitions would be required. This is due to the fact that under this option, the PG&E natural gas pipeline would not require relocation. The two partial acquisitions would be required for the revised alignment near the Morrison Creek levee.

All of these partial acquisitions would be restricted to portions of residential backyards. As such, the assessed value of these unimproved properties is minimal and their partial acquisition for Alternative 2 would not create substantial impacts to the local property tax revenue base.

Full Acquisitions. If Design Option A were implemented, a total of one full acquisition would be required. This property would be the 75,158 square-foot IJAZ property, which would be used for the relocation of TPSS #10. This property is currently vacant. Therefore, the value of this property is relatively low and its acquisition would not create substantial impacts to the local property tax revenue base.

If Design Option B were implemented, a total of seven full acquisitions would be required. One of these properties would be the aforementioned IJAZ property. The other six full acquisition properties would consist of residual parcels that are currently parts of residential backyards. These remnant parcels are unimproved and have minimal assessed value.

If Design Option C were implemented, a total of 37 full acquisitions would be required. These acquisitions would consist of 36 improved residential parcels and the aforementioned IJAZ property. The assessed value of these residential properties, based on current County of Sacramento assessor's data, averages approximately \$120,000 each.³ Based on this average, the acquisition of these private parcels would remove approximately \$4.32 million in assessed property values from the local property tax revenue base. Based on the current County of Sacramento estimate *ad valorem* property tax rate of 1.0382 percent, this would result in a loss of approximately \$59,700 in local property tax revenues annually.

Considered against the taxable land valuations within the County of Sacramento, the fiscal impacts associated with the implementation of any of the design options under Alternative 2 would be minimal. Moreover, this loss in property tax revenues would likely be offset by the larger economic benefits from the overall Phase 2 Extension project. Those benefits include increased mobility for area residents and enhanced access to employment opportunities. Based

³ The average assessed value presented here does not constitute an official appraised value and cannot be used for determining fair market value of the properties in question. These values are presented here for the purposes of analysis only and should not be considered an offer for acquisition.

on these considerations, implementation of Alternative 2 would not create an adverse effect. Under CEQA, the impact would be less than significant.

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3.9 ENVIRONMENTAL JUSTICE

Introduction

The purpose of the Environmental Justice analysis, as defined in Executive Order 12898, is to consider whether project-related significant impacts are disproportionately borne by minorities or low income populations. Pursuant to this executive order and the Department of Transportation (DOT) Order 5610.2 (published April 15, 1997), NEPA documents must analyze health and environmental effects on minorities and low-income populations living near a proposed project. This section addresses Executive Order 12898 by first determining whether there are Environmental Justice communities (defined as predominantly minority or predominantly low income per federal guidelines) within the project study area and, if so, whether effects of the Phase 2 Extension project would affect these communities disproportionately. Related issues associated with this analysis can be found in Section 3.7, Land Use, and Section 3.8, Population, Housing, and Socio-Economics.

Environmental Setting

Definition of Environmental Justice Community

For the affected study area, the demographic characteristics were identified based on data gathered from the 2000 Census. The 2010 Census has been released, but demographic information at the Census Block Group level is not yet available. Accordingly, the 2000 Census represents the most recent demographic data available. The demographic characteristics reviewed include:

- a. Total population;
- b. Percent of population of minority status¹ in the affected study area;
- c. Percent of population of low-income status in the affected study area;
- d. Percent of population of minority status in the City of Sacramento; and
- e. Percent of population of low-income status in the City of Sacramento.

¹ Based on the FHWA's Interim Guidance for addressing Environmental Justice, a minority person is defined as someone who is American Indian and Alaska Native, Asian, Black or African American, Native Hawaiian and Other Pacific Islander, or Hispanic or Latino.

The following criteria were used to determine if the affected area is an Environmental Justice community:²

- a. At least one-half of the population is of minority status;
- b. At least one-quarter the population is of low-income status;
- c. The percentage of the population that is of minority status is at least 10 percentage points higher than for the City of Sacramento; and
- d. The percentage of the population that is of low-income status is at least 10 percentage points higher than for the City of Sacramento.

Meeting any of the criteria listed above would qualify the community as an Environmental Justice community.

Population and Income Characteristics

General demographic information in the project area was obtained from the Sacramento Area Council of Governments (SACOG) and U.S. Census data estimates for the year 2000. The Census block groups directly adjacent to the Phase 2 Extension project alignment were used as the study area for demographic characteristics. Figure 3.9-1 shows the boundaries of the Census tracts.

Race and Ethnicity. Ethnic population data for the Census block groups adjacent to the proposed project alignment are presented in Table 3.9-1. Based on the race and ethnicity data, the Census block groups along the proposed Phase 2 alignment would all be considered minority Environmental Justice communities. Each of these block groups contain minority persons making up more than 50 percent of the population of these areas.³ The percentage of minority persons in all but one of the block groups (Census Tract 96.18, Block Group 2) is also more than 10 percentage points higher than the minority population of the larger City of Sacramento.

² These criteria are based on guidance from relevant documents issued by federal agencies. These include:

- Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. February 11, 1994, 59 Federal Register at 7630.
- U.S. Environmental Protection Agency, *Interim Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis, Office of Federal Activities*. September 30, 1997.
- Federal Highway Administration, *Interim Guidance: Addressing Environmental Justice in the Environmental Assessment (EA)/Environmental Impact Statement (EIS)*. March 2, 1999.
- Metropolitan Transportation Commission, *Equity Analysis Report*. February 2009.

³ The 50 percent threshold is based upon guidance contained in the Council on Environmental Quality's "Environmental Justice: Guidance Under the National Environmental Policy Act (Appendix A: Guidance for Federal Agencies on Key Terms in Executive Order 12898)." December 10, 1997. <http://ceq.hss.doe.gov/nepa/regs/ej/ej.pdf> (website accessed May 25, 2011).

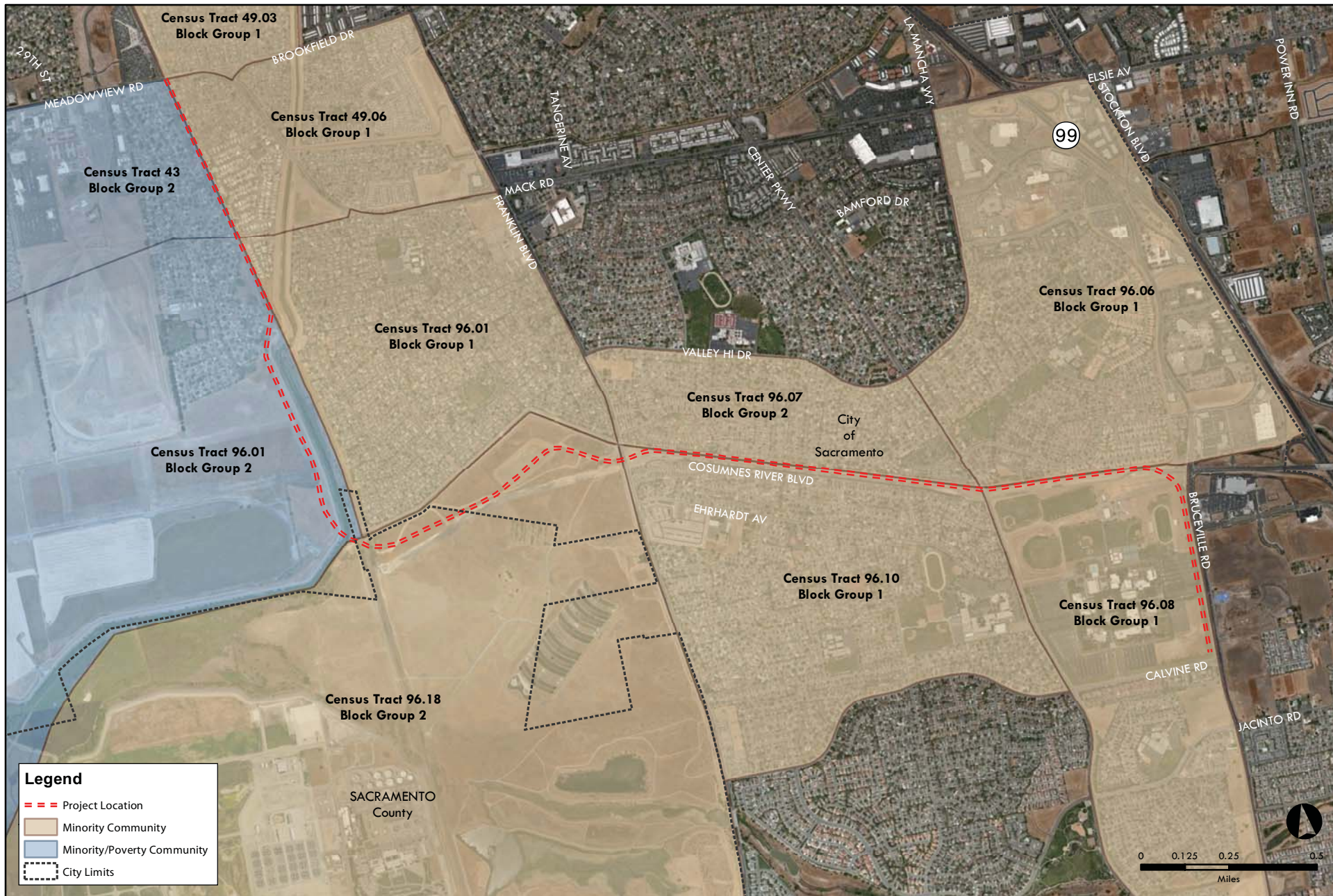


FIGURE 3.9-1
Minority and Low-Income Communities

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Source: "Minority and Low-Income Communities" [map], 1:24,000, Project_Data.gdb [computer files], US Census Bureau, 2000, ArcInfo 10.0, Redlands, CA, Environmental Systems Research Institute, 1999-2010.

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Table 3.9-1
Race/Ethnicity Status of Census Block Groups
in the Phase 2 Extension Project Study Area

Census Tract	Block Group	Total Population	White Only, non-Hispanic	Black	Hispanic	Asian-American	American Indian	Alaskan Native	Percent Minority	City of Sacramento Percent Minority	EJ Minority Community ?
96.01	2	1,353	83	193	238	718	0	N/A	93.9	59.4	Yes
96.01	1	5,503	978	1,673	964	1479	15	N/A	82.2	59.4	Yes
96.18	2	2,414	835	264	353	874	22	N/A	65.4	59.4	Yes
96.06	1	4,152	1,078	1251	744	783	28	N/A	74.0	59.4	Yes
96.07	2	3,529	702	942	1030	586	0	N/A	80.1	59.4	Yes
96.10	1	6,233	1,415	1362	1183	1561	41	N/A	77.3	59.4	Yes
96.08	1	2,149	488	636	301	482	32	N/A	77.3	59.4	Yes
49.03	1	4,525	602	1410	669	1576	50	N/A	86.7	59.4	Yes
49.06	1	2,310	453	588	585	482	0	N/A	80.4	59.4	Yes
43	2	2,400	570	476	389	819	27	N/A	76.3	59.4	Yes

Source: U.S. Census Bureau, 2000.

Note:

N/A: Data not available

Income Status. Based on income data presented in Table 3.9-2, two block groups (Census Tract 96.01, Block Group 2 and Census Tract 43, Block Group 2) would be considered low income⁴ communities. The U.S. Department of Health and Human Services poverty guidelines for the year 2000 defined the poverty threshold as annual income of less than \$8,350 for an adult individual under the age of 65 and annual income of less than \$17,050 for a family of four persons.⁵ The percentage of persons living below the poverty threshold in these areas is more than 25 percent, and the percentage is also more than 10 percentage points higher than for the City of Sacramento. The residents of the remainder of the block groups in the study area would not be considered an Environmental Justice population on the basis of income status, since the percentage of persons living below the poverty threshold is less than 25 percent, and is less than 10 percentage points higher than the City of Sacramento. However, all of the Census block groups would still be considered Environmental Justice communities based on ethnicity, as discussed previously.

Table 3.9-2
Poverty Status of Census Block Groups
in the Phase 2 Extension Project Study Area

Census Tract	Block Group	Total Population	Total Poverty ^a	Persons Below Poverty	Persons Above Poverty	Percent Poverty	Sacramento Percent Poverty	EJ Poverty Community ?
96.01	2	1,353	1,343	404	939	30.1	20.0	Yes
96.01	1	5,503	5,443	1078	4365	19.8	20.0	No
96.18	2	2,414	2,400	90	2310	3.8	20.0	No
96.06	1	4,152	3,941	779	3162	19.8	20.0	No
96.07	2	3,529	3,517	785	2732	22.3	20.0	No
96.10	1	6,233	6,150	959	5191	15.6	20.0	No
96.08	1	2,149	2,142	281	1861	13.1	20.0	No
49.03	1	4,525	4,492	792	3700	17.6	20.0	No
49.06	1	2,310	2,294	321	1973	14.0	20.0	No
43	2	2,400	2,340	832	1508	35.6	20.0	Yes

Source: U.S. Census Bureau, 2000.

Note:

- a. Population considered in poverty analysis: The poverty population does not include persons living in institutional group quarters such as correctional facilities and nursing homes, and includes only a sampling of persons living in non-institutional group homes such as college dormitories.

⁴ The U.S. Department of Transportation's Order to Address Environmental Justice in Minority Populations and Low-Income Populations (April 15, 1997) defines a "low-income" as "a person whose median household income is at or below the Department of Health and Human Services poverty guidelines." See Federal Register: April 15, 1997, Volume 62, Number 72, Pages 18377-18381. http://www.fhwa.dot.gov/environment/ejustice/dot_ord.htm (website accessed March 1, 2011).

⁵ U.S. Department of Health and Human Services, *Annual Update of THHS Poverty Guidelines*. Federal Register: February 15, 2000 (Volume 65, Number 31, Pages 7555-7557). <http://aspe.hhs.gov/poverty/00fedreg.htm>. Accessed February 28, 2011.

Applicable Policies and Regulations

Environmental Justice

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated February 11, 1994), calls on federal agencies to identify and address disproportionately high and adverse human health or environmental effects of federal programs, policies, and activities on minority populations and low-income populations. In 1997, the Council on Environmental Quality issued guidance to assist federal agencies in implementing the Executive Order. Also in 1997, the U.S. Department of Transportation (DOT) issued an order to establish procedures for use in complying with Executive Order 12898 for its operating administrations, including FTA.

The Executive Order defines key terms and provides guidance for identifying and addressing disproportionately high and adverse impacts to low income and minority populations. If disproportionately high and adverse impacts would result from the proposed action, mitigation measures or alternatives must be developed to avoid or reduce the impacts, unless the agency finds that such measures are not feasible. Impacts and benefits of transportation projects result from the physical placement of such facilities, and also from their ability or inability to improve or impede access to neighborhoods or portions of a region.

Impact Assessment and Mitigation Measures

Standards of Significance

The project alternatives would have an adverse effect on environmental justice and if they:

- Would have a disproportionate effect on environmental justice populations (a disproportionate effect is defined as an effect that is predominantly borne, more severe, or of a greater magnitude in areas with environmental justice populations than in other areas).

Environmental Analysis

Alternative 1 – No Project. This alternative would result in implementation of the Phase 2 Extension project as analyzed in the previously adopted SFEIS/SFEIR. The SFEIS/SFEIR reported that implementation of the Phase 2 Extension project would not cause disproportionately high and adverse effects on minority or low-income populations. The Phase 2 Extension project would improve access to employment, education, medical, and retail centers within the region. Residents would be able to ride the LRT with improved travel times on exclusive right-of-way. The benefits of the project would be shared by all riders and all groups in the area, depending on their trip purposes, origins and destinations. The SFEIS/SFEIR also found that all potential impacts on area residents would be minimized through mitigation measures included in the project. In summary, the SFEIS/SFEIR determined that the project's benefits, such as improved transit service, greater accessibility, and shorter travel times, would accrue equally to all residents in the project area. As such, the implementation of Alternative 1 would not cause disproportionately high and adverse effects on any minority or low-income populations as defined in Executive Order 12898.

Alternative 2 – Modifications to the Phase 2 Extension Project. Under this alternative, the previously adopted Phase 2 Extension project would be modified as described in Section 2, Project Alternatives, of this IS/EA. Impacts to each environmental resource area are described below.

Aesthetics and Visual Resources. The previously approved SFEIS/SFEIR determined that there are no scenic resources, such as distinctive buildings, historic structures, rock outcroppings, panoramic high-quality views, or stands of mature trees, in the project area. As noted in Section 3.1, Aesthetics and Visual Resources, of this IS/EA, implementation of the Phase 2 Extension project would be consistent with the existing environment and visual character of the area. Additionally, the SFEIS/SFEIR determined that any lighting associated with the project would be minimal and would be designed to minimize adverse effects to existing properties. Implementation of Alternative 2 would not introduce any new light sources not already assessed in the SFEIS/SFEIR. Therefore, implementation of the proposed project would not adversely affect scenic vistas, scenic resources, existing visual character, or light and glare in the project area. Since the implementation of Alternative 2 would not create an adverse effect with respect to aesthetics and visual quality, it would not disproportionately affect Environmental Justice communities in the project area.

Air Quality. As described in the SFEIS/SFEIR, implementation of the Phase 2 Extension project would result in the reduction of local and regional vehicle miles traveled (VMT), which supports the attainment goals promulgated by the state Air Quality Attainment Plan (AQAP). As identified in Section 3.2, Air Quality, of this IS/EA, implementation of Alternative 2 would not change the expected air quality benefits of the Phase 2 project and would therefore be consistent with the AQAP. Additionally, Section 3.2, Air Quality, indicates that neither Alternative 1 nor Alternative 2 would violate applicable air quality standards during construction or operation of the proposed project. While construction of the proposed project could adversely affect the Environmental Justice communities along the corridor, as a standard practice, RT would be required to adhere to the best management practices outlined in the SFEIS/SFEIR, which would reduce construction emission below threshold levels. With implementation of these measures, Alternative 2 would not result in an adverse air quality effect and would not disproportionately affect Environmental Justice communities in the project area.

Biological Resources. The analysis presented in Section 3.3, Biological Resources, of this IS/EA determined that implementation of Alternative 2 would not result in additional impacts to sensitive species, sensitive habitats, or wetlands and waters of the U.S. that were not already assessed in the SFEIS/SFEIR. Furthermore, mitigation measures identified in the SFEIS/SFEIR would apply to both Alternative 1 and Alternative 2 of the proposed project. Since the implementation of Alternative 2 would not create an adverse effect with respect to biological resources, it would not disproportionately affect Environmental Justice communities in the project area.

Climate Change. The potential impact to GHG emissions associated with the proposed modification to the Phase 2 Extension project is evaluated in Section 3.4, Climate Change, both in terms of long-term operational emissions and short-term, temporary construction-period emissions. The operation of the Phase 2 project would be essentially the same under both Alternatives 1 and 2. As described in the SFEIS/SFEIR, operation of the Phase 2 project would result in net beneficial effects associated with GHG emissions through reduction of VMT. Alternative 1 would not change these beneficial effects.

Similarly, construction impacts associated with the UPRR and Morrison Creek Levee track realignments and the 400-foot tailtrack extension proposed under Alternative 2 would be negligible when compared to the Phase 2 Extension project in its entirety. Based on each of these considerations, the implementation of Alternative 2 would have a beneficial effect on reductions of GHG emissions.

Moreover, Section 3.4, Climate Change, of this document determined that both Alternative 1 and Alternative 2 would have the beneficial effect of supporting and furthering greenhouse gas reduction plans, policies, and regulations. Since the implementation of Alternative 2 would not create an adverse effect with respect to climate change, it would not disproportionately affect Environmental Justice communities in the project area.

Cultural Resources. Section 3.5, Cultural Resource, examined the potential for the proposed project to adversely affect historic resources, archaeological resources, paleontological resources, or human remains within the project area. The analysis determined that there would be no adverse impacts to archaeological, historic, or architectural resources as a result of the implementation of Alternative 2. Furthermore, according to the City of Sacramento General Plan, the paleontological sensitivity of the impact area for the Phase 2 Extension project is very low. Since the project footprint proposed under Alternative 2 is essentially identical to that proposed as part of No Project Alternative, the expected impacts would be the same. Additionally, there are no known cemeteries or human remains within the project area of either alternative. In the event that ground-disturbing activities uncover previously unknown buried human remains, adherence to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code would ensure that standard protocol is followed by RT and its construction contractor. Overall, there would be no adverse effect to cultural or paleontological resources as a result of implementation of Alternative 2. Since the implementation of Alternative 2 would not create an adverse effect with respect to cultural resources, it would therefore not disproportionately affect Environmental Justice communities in the project area.

Land Use. Section 3.6, Land Use, examined the potential for the proposed project to result in a change in land use that would be incompatible with surrounding area; conflict with an applicable land use plan, policy, or regulation; or physically divide an established community. The SFEIS/SFEIR determined that, with mitigation, land uses adjacent to the project area would be able to continue to function as intended without substantial interference or annoyance. Section 3.6 evaluated each of the proposed modifications and determined that when considered independently and jointly, Alternative 2 would be compatible with surrounding land uses and would not physically divide the existing community.

With regard to the proposed project's compliance with applicable plans, policies, and regulations, the track alignment modifications proposed under Alternative 2 would satisfy the City of Sacramento General Plan's requirements, and the remaining modifications would not substantively change the previously approved Phase 2 Extension project, which the SFEIS/SFEIR determined to be consistent with relevant policies, plans, and agency regulations. Therefore, the proposed project would not adversely affect land use and planning within the project area. Since the implementation of Alternative 2 would not create an adverse effect with respect to land use, it would not disproportionately affect Environmental Justice communities in the project area.

Noise and Vibration. The SFEIS/SFEIR determined that sound walls of suitable heights would mitigate the increase in noise to levels acceptable under FTA criteria. The additional analysis performed for the track alignment modifications is summarized in Table 3.9-3. Specifically, Table 3.9-3 compares Design Options A, B, and C and shows they have similar noise effects and mitigation requirements.

**Table 3.9-3
Comparison of Noise Impacts per Design Option**

Design Option	Minimum Separation Distance	Level of Severity	Mitigation Requirement	
			East Side	West Side
Design Option A	14 Feet	Most Severe	6 Foot Sound Wall	7 Foot Sound Wall
Design Option B	21 Feet	Severe	6 Foot Sound Wall	7 Foot Sound Wall
Design Option C	42 Feet	Least Severe	6 Foot Sound Wall	4 to 5 Foot Sound Wall

Source: RT, 2011.

For all three design options, the construction of noise barriers, as described in Section 3.7, would reduce operational noise impacts below the FTA's Moderate Impact criteria and would keep resultant noise levels within the City of Sacramento General Plan's Conditionally Acceptable range. The analysis also found that the implementation of a track and wheel maintenance program on the LRT tracks and vehicles could reduce noise levels to a point where the need for a sound wall on the east side of the alignment could be eliminated. In terms of noise exposure, the proposed project would impose significant noise effects on Environmental Justice communities in the project study area. Those effects would be reduced to acceptable levels if the identified mitigation measures were implemented. With implementation of these measures, Alternative 2 would not result in an adverse noise effect and would not disproportionately affect Environmental Justice communities in the project area.

A similar analysis was conducted for groundborne vibration impacts associated with the proposed project. For Alternative 1, vibration measurements and modeling conducted for the SFEIS/SFEIR determined that the vibration impacts would occur at several residences to the west of the UPRR corridor where LRT vibration levels would exceed the FTA general assessment criteria. The SFEIS/SFEIR determined that mitigation consisting of installation of Tire Derived Aggregate (TDA), ballast mats, or floating slabs under the LRT track bed would lessen the impacts to acceptable levels.

For Alternative 2, Design Option A would locate LRT operations closest to existing residents and was therefore used as the worst-case-scenario for evaluation of vibration impacts. Based on the results of the prediction modeling, there are a number of residences west of the future southbound LRT tracks where vibration levels could exceed the FTA detailed assessment criteria and mitigation would be needed to reduce vibration levels at these receptor locations. Accordingly, Alternative 2 would impose significant vibration effects on Environmental Justice communities in the project study area. Mitigation strategies to address these effects would be the same as identified for Alternative 1 above. Those effects would be reduced to acceptable levels if the identified mitigation measures were implemented. With implementation of these measures, Alternative 2 would not result in an adverse vibration effect and would not disproportionately affect Environmental Justice communities in the project area.

Section 3.7 assessed the potential for temporary noise impacts due to construction activities. The analysis completed for the SFEIS/SFEIR reported that temporary noise would occur during construction phases, and would include demolition, utilities relocation, grading, and the installation of tracks, LRT systems, stations, and parking areas. Each of these activities would have the potential to create noise impacts that would intrude on residents near the construction sites. Construction activities for Alternative 1 and Alternative 2 would be essentially the same and therefore associated temporary noise impacts would be similar as well. These effects would significantly affect Environmental Justice communities in the project study area. Mitigation adopted in the SFEIS/SFEIR would also be implemented under Alternative 2, and would include requirements to limit the hours of construction, avoid staging equipment and materials near sensitive receptors, and would require the implementation of general good construction practices. The installation of noise control technology for construction equipment would also be required. With implementation of these measures, Alternative 2 would not result in an adverse vibration effect and would not disproportionately affect Environmental Justice communities in the project area.

Finally, the analysis undertaken in the SFEIS/SFEIR reported that aircraft noise (Sacramento Executive Airport is the closest to the project corridor) was a minor contributor to noise levels within the Phase 2 Extension corridor and that this condition would not be affected by implementation of the project. The conditions and effects described in the SFEIS/SFEIR would remain unchanged with implementation of Alternative 2. Overall, adherence to the mitigation measures identified in Section 3.7 of this IS/EA would ensure that permanent and temporary noise and vibration levels would not exceed applicable FTA criteria. Likewise, the impact of the proposed project would be less than significant under CEQA.

Population, Housing, and Socio-Economics. Section 3.8, Population, Housing, and Socio-Economics, evaluated the potential for the proposed project to induce substantial population growth, displace a substantial number of existing houses or people, reduce employment, or substantially reduce local jurisdiction revenues. Based on the analysis in Section 3.8 only acquisition and displacement of residential properties would be regarded as adverse. Property acquisition requirements for implementation of Alternative 2 are summarized in Table 3.9-4 below.

Nearly all of Alternative 2's components would require some level of property acquisition. This would include a mix of both full and partial acquisitions, depending upon which design option were chosen. Some of the full acquisitions would require relocation of existing residents, and some of the partial acquisitions could substantially devalue the affected properties to a point where compensation for the full value of the property would be warranted. Given the demographic composition of the project study area, these land acquisition and displacement effects would adversely affect Environmental Justice populations.

Table 3.9-4
Summary of Acquisitions Needed for Implementation of Alternative 2

Modification	Number of Partial Acquisitions	Number of Full Acquisitions
LRT Tracks Adjacent to the UPRR Mainline Tracks	-	-
Design Option A ^a	31	None
Design Option B	31	None
Design Option C ^a	None	36
PG&E Natural Gas Pipeline Relocation ^a (applicable to Design Option B only)	7	6
Morrison Creek Levee Setback	2	None
TPSS #10 Relocation	None	1
Tailtrack Extension at Cosumnes River College	None	None

Source: Sacramento Regional Transit District, February 2011.

- a. Note that under Design Options A and C, none of the acquisitions identified for the PG&E Natural Gas Pipeline Relocation would be required.

As noted in Section 3.8, Population, Housing, and Socio-Economics, federal and state laws and regulations govern the acquisition of private property, and include requirements for just compensation, relocation assistance, and other assistance measures. Compliance with these requirements is intended to mitigate the financial impacts to affected property owners. Relocation assistance and other programs are intended to mitigate the other costs of displacement for those residents for whom full acquisition is required, or where the economic effect of a partial take is so severe that a full acquisition is warranted. With implementation of these measures, Alternative 2 would not result in an adverse displacement effect and would not disproportionately affect Environmental Justice communities in the project area.

Determination of Disproportionate Effects

The purpose of the preceding impact assessment summary of this IS/EA was to disclose the adverse environmental effects of the proposed project. As shown in Figure 3.9-1 and in Tables 3.9-1 and 3.9-2, all of the census block groups adjacent to areas proposed for modification under Alternative 2 are considered minority populations, and two of the block groups are considered low-income populations as defined in Executive Order 12898. Therefore, all of the proposed modifications under Alternative 2 would occur in Environmental Justice communities.

In every instance that the proposed project was found to have adverse effects on Environmental Justice communities, feasible mitigation measures were identified that would reduce the adverse effects. The effects that would be borne by the Environmental Justice communities in the project corridor include construction air emissions, construction and operational noise and vibration, and displacement and loss of property value. With implementation of the mitigation measures and compliance with standard regulatory and legal requirements, these adverse effects to Environmental Justice populations within the Phase 2 Extension project area would be reduced to levels considered less than significant. Since the

implementation of Alternative 2 would not create an adverse effect, after mitigation, Environmental Justice communities in the project area would not be disproportionately affected.

To provide further public awareness of the project effects, an additional community meeting will be held in the affected community during the public review period for this document. All area residents will be invited to attend. This meeting will allow RT and FTA to identify additional mitigation that may be warranted.

It should be noted that the identification of a disproportionately high and adverse effect on Environmental Justice populations does not preclude a project from moving forward. Applicable regulations indicate that a project with disproportionately high and adverse effects may be implemented under the following conditions:

- Programs, policies, and activities that will have disproportionately high and adverse effects on minority populations or low-income populations may be carried out if further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effects are not practicable. In determining whether a mitigation measure or an alternative is ‘practicable’, the social, economic (including costs), and environmental effects of avoiding or mitigating the adverse effects must be taken into account.
- Respective programs, policies or activities that have the potential for disproportionately high and adverse effects on protected populations may only be carried out if:
 1. A substantial need for the program, policy, or activity exists, based on the overall public interest; and
 2. Alternatives that would have less adverse effects on protected populations have either:
 - a.) adverse social, economic, environmental, or human health impacts that are more severe; or
 - b.) Would involve increased costs of an extraordinary magnitude.

RT and FTA will continue to actively solicit input regarding project alternatives and design. Environmental Justice populations and communities of concern would receive the same level of mitigation that other population groups along the project alignment would receive. Such measures would include best management practices during construction, noise and vibration abatement controls, and compliance with federal and state laws for property acquisition, as well as procedures outlined in the project-specific Real Estate Acquisition Management Plan. Coordination would occur with Environmental Justice populations and communities of concern during preparation of the project design-phase plans.

3.10 ENVIRONMENTAL ISSUES NOT SUBJECT TO FURTHER EVALUATION

As discussed in Section 2 of this document, this IS/EA analyzes two alternatives: Alternative 1, the No Project Alternative, and Alternative 2, the Modifications to the Phase 2 Extension Project Alternative. The No Project Alternative would construct the Phase 2 Extension project as already assessed in the Phase 2 Extension project SFEIS/SFEIR and therefore represents the conditions against which Alternative 2 is compared. Alternative 2 would implement five specific modifications, with three design options for one of those modifications, to the previously approved project assessed in the SFEIS/SFEIR.

For the issues presented below in Table 3.10-1, the environmental setting, regulatory environment, and potential impacts from implementation of Alternative 2 are essentially identical to those that were reported in the SFEIS/SFEIR for Alternative 1. In all cases, the impacts resulting from implementation of Alternative 2 would not be adverse and would be less than significant under CEQA, or would be mitigated to below a level of significance by implementation of mitigation recommended in the SFEIS/SFEIR (and subsequently adopted by RT and FTA) or by compliance with regulatory requirements. As such, these issues are not subject to further evaluation in this IS/EA since such evaluation would be a duplication of the assessment in the SFEIS/SFEIR. Readers desiring more information on these topics are directed to the respective section of the SFEIS/SFEIR, as indicated below.

Table 3.10-1
Environmental Issues Not Subject to Further Analysis

Issue	SFEIS/SFEIR Significance Determination	Rationale for Forgoing Additional Analysis
Agricultural Resources (Section 4.2 of the SFEIS/SFEIR)	CEQA: Less than Significant	Implementation of Alternative 2 would not change the location of the LRT ROW in relation to agricultural lands. As discussed in Section 3.6, Land Use, of this IS/EA, all of the individual modifications under Alternative 2 would occur in areas surrounded by developed areas, such as residential or academic uses. No existing agricultural uses or designated important farmlands would be affected. Therefore, Alternative 2 would not conflict with applicable federal laws and policies with respect to agricultural resources. Under CEQA the impact would be less than significant.
Electromagnetic Fields (EMF) (Section 4.6 of the SFEIS/SFEIR)	CEQA: Less than Significant	Analysis within the SFEIS/SFEIR determined that EMF intensities associated with the operation of the LRT system would be very low within the RT ROW and virtually undetectable outside of the ROW. In both cases, EMF levels would be well below recommended exposure standards. The implementation of Alternative 2 would not change this fact, and would not conflict with applicable federal laws and policies with respect to electromagnetic fields. Under CEQA, the impact would be less than significant.

Table 3.10-1
Environmental Issues Not Subject to Further Analysis

Issue	SFEIS/SFEIR Significance Determination	Rationale for Forgoing Additional Analysis
Geology, Soils and Seismicity (Section 4.7 of the SFEIS/SFEIR)	CEQA: Less than Significant	As indicated in the SFEIS/SFEIR, there are no active faults in the immediate vicinity of the Phase 2 Extension project. Although the potential for substantial ground shaking exists, this risk would be mitigated by the implementation of standard design requirements and building codes and standards that would ensure the structural integrity of system to levels considered acceptable. The individual modifications proposed under Alternative 2 would not change the geologic setting of the previously approved Phase 2 Extension project, would not introduce new project elements into areas that pose previously undefined hazards, and would adhere to the same design requirements, codes, and standards as mentioned above. Therefore, Alternative 2 would not conflict with applicable federal laws and policies with respect to geology and soils. Under CEQA, the impact would be less than significant.
Hazardous Wastes (Section 4.8 of the SFEIS/SFEIR)	CEQA: Less than Significant with Mitigation	Analysis in the SFEIS/SFEIR reported that no known hazardous material sites were present along the Phase 2 Extension project corridor in the vicinity of the proposed Alternative 2 modifications. An updated Phase 1 Environmental Site Assessment conducted in January 2011 in the vicinity of the proposed modifications confirmed the initial finding. The SFEIS/SFEIR identified a number of mitigation measures to be implemented if previously unrecorded hazardous waste were to be discovered during project construction. Those same measures would also be required under Alternative 2. Under Design Option C of Alternative 2, 36 residential structures would require demolition to accommodate the LRT tracks. Those structures could contain hazardous materials such as asbestos or lead. However, the SFEIS/SFEIS provided mitigation requiring inspection of all structures to be demolished to determine if hazardous materials are present. All demolition activities would be required to be performed under applicable regulatory procedures and by qualified hazardous materials personnel. Therefore, with these mitigation measures and compliance with standard regulatory procedure, implementation of Alternative 2 would not conflict with applicable federal laws and policies with respect to hazardous materials. Under CEQA, the impact would be less than significant.

Table 3.10-1
Environmental Issues Not Subject to Further Analysis

Issue	SFEIS/SFEIR Significance Determination	Rationale for Forgoing Additional Analysis
Hydrology, Floodplain, and Water Quality (Section 4.9 of the SFEIS/SFEIR)	CEQA: Less than Significant with Mitigation	Analysis within the SFEIS/SFEIR reported that impacts to water quality and from floodplains could be effectively mitigated. The implementation of Alternative 2 would not affect the construction or operation of the Phase 2 project in such a way as to create new impacts to any flood control structures. Specifically, Alternative 2 would provide for a greater separation (50 feet minimum) of the LRT tracks from the Morrison Creek levee, and would fully satisfy separation standards established in the City of Sacramento General Plan and by the State of California. Alternative 2 would also not create any water quality issues that have not already been addressed in the SFEIS/SFEIR. Mitigation regarding water quality control measures and coordination with flood control agencies would also be required under Alternative 2. Therefore, Alternative 2 would not conflict with applicable federal laws and policies with respect to hydrology, floodplains, and water quality. Under CEQA, the impact would be less than significant.
Mineral and Energy Resources (Section 4.11 of the SFEIS/SFEIR)	CEQA: Less than Significant	<p>The SFEIS/SFEIR found that there would be no impact to mineral resources as a result of implementation of the Phase 2 Extension project since no precious or scarce minerals would be mined or consumed in significant quantities to support the construction and operation of the Phase 2 Extension project. The implementation of Alternative 2 would also not require the use of additional precious or scarce resources. Therefore, the original finding in the SFEIS/SFEIR also remains applicable to the modifications proposed as part of Alternative 2.</p> <p>For energy resources, the individual modifications proposed under Alternative 2 would also not add substantial track mileage (400 feet of additional track mileage, or less than two percent of the total Phase 2 project mileage), railcars, stations, or other facilities that would require additional energy for operation. The 400-foot tailtrack extension would not be intended for passenger services, but rather for train storage during non-commute hours and the associated energy demand would in fact be lessened since the need to shuttle empty light rail vehicles to downtown Sacramento for storage during non-commute hours would be eliminated. Therefore, Alternative 2 would not result in new impacts to energy demand that were not already assessed in the SFEIS/SFEIR.</p>

Table 3.10-1
Environmental Issues Not Subject to Further Analysis

Issue	SFEIS/SFEIR Significance Determination	Rationale for Forgoing Additional Analysis
Public Services and Facilities (Section 4.14 of the SFEIS/SFEIR)	CEQA: Less than Significant	The SFEIS/SFEIR found that the Phase 2 Extension project would not displace any public services or facilities (parks, fire stations, schools, etc.) and would improve accessibility to existing community facilities by providing an alternative mode of transportation that the public could use to travel to those facilities. The modifications proposed under Alternative 2 would also not displace or otherwise impact public facilities. Under CEQA, the impact would be less than significant.
Recreational Facilities (Section 4.15 of the SFEIS/SFEIR)	CEQA: Less than Significant	Implementation of Alternative 2 would not alter the Phase 2 Extension project alignment near any of the recreational facilities identified in the SFEIS/SFEIR. As discussed in Section 3.6, Land Use, of this IS/EA, all of the individual modifications under Alternative 2 would occur in areas surrounded by developed areas, such as residential or academic uses, and the modifications would not obstruct or encroach upon any existing recreational areas. As such, Alternative 2 would have no effect on recreational areas, including any Section 4(f) or Section 6(f) parklands. Under CEQA, there would be no impact.
Safety and Security (Section 4.16 of the SFEIS/SFEIR)	CEQA: Less than Significant with Mitigation	The previously approved SFEIS/SFEIR indicated that security and safety concerns were associated with the LRT stations, auto and bus drop off zones, park-and-ride lots, and at-grade rail crossings. Implementation of the modifications proposed as part of Alternative 2 would not result in increased security and safety concerns compared to the previously approved project. Therefore, with implementation of the mitigation measures proposed in the SFEIS/SFEIR for increased security and fire safety under the overall Phase 2 Extension project, there would not be an adverse effect. Under CEQA, the impact would be less than significant. It should be noted that the impetus for the track realignment along the UPRR tracks was to further reduce the potential effects from train derailment and to comply with UPRR's track separation guidelines.
Utilities (Section 4.17 of the SFEIS/SFEIR)	CEQA: Less than Significant	Table 4.17-2 in the SFEIS/SFEIR provides a summary of the utility modifications necessary to implement the Phase 2 Extension project. Under Alternative 2, proposed utility modifications would be the same as described for Alternative 1, except that the relocation of the PG&E natural gas pipeline would not be undertaken for two of the Alternative 2 design options (Design Options A and C). Under Design Option B, the relocation would still occur but the length of the pipeline relocation along Detroit Boulevard would be reduced by 0.5 mile and tied back to the main PG&E pipeline via an existing utility corridor. The pipeline

**Table 3.10-1
Environmental Issues Not Subject to Further Analysis**

Issue	SFEIS/SFEIR Significance Determination	Rationale for Forgoing Additional Analysis
Transportation (Section 3 of the SFEIS/SFEIR)	CEQA: Less than Significant with Mitigation	<p>construction area within this existing utility corridor is identical to that already assessed in the SFEIS/SFEIR; the sole difference is that the diameter of the connecting pipeline would be increased from 10 inches to 16 inches under Alternative 2. This change would not alter the potential impacts associated with the relocation. In addition, implementation of Alternative 2 would decrease the impact to Detroit Boulevard and leave the remaining utility modifications essentially unchanged.</p> <p>California has established laws to protect infrastructure such as pipelines from damage caused by construction activities. Regulations are also in place concerning design, engineering, construction, and maintenance of pipelines. Compliance with these standard regulatory requirements, as previously prescribed in the SFEIS/SFEIR, would lessen the effects associated with the pipeline's relocation. Impacts under CEQA would be less than significant.</p> <p>The SFEIS/SFEIR found that the Phase 2 Extension project would result in increased transit use, decreased roadway congestion, and decreased parking demand in the downtown Sacramento area. For impacts to intersections, the Phase 2 Extension project would reduce traffic volumes on some roadways in the study area and increase volumes on others compared to the No-Action Alternative, but only marginally. The SFEIS/SFEIR identified five intersections in the City of Sacramento and one intersection in the County of Sacramento that would exceed Level of Service (LOS) thresholds. The SFEIS/SFEIR also identified potential impacts associated with delay at grade crossings. Mitigation measures were proposed in the SFEIS/SFEIR to reduce impacts to these intersections and at grade crossings. Since the modifications proposed under Alternative 2 would not affect trip generation or traffic distribution beyond that already assessed originally under the SFEIS/SFEIR, the impacts of Alternative 2 would also not be not adverse. Under CEQA, the impacts would be less than significant.</p>
Section 4(f) (Section 4.18 of the SFEIS/SFEIR)	Not Applicable	<p>The SFEIS/SFEIR determined that Section 4(f) analysis was not applicable to the Phase 2 Extension project because the adopted design for the project would not use any Section 4(f) properties. The modifications to the Phase 2 Extension project presented in Alternative 2 would also not use Section 4(f) properties; therefore, a Section 4(f) evaluation is not necessary in this IS/EA.</p>

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Section 4

Additional CEQA Considerations

4.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

Section 21100(b)(2)(A) of CEQA requires the identification of any significant environmental effects that cannot be avoided if the project were implemented. As discussed in Section 3.6, Land Use, one effect that would be adverse under NEPA was identified. This same impact would be significant under CEQA. The impact is Alternative 1's inconsistency with the adopted City of Sacramento General Plan policy regarding development within 50 feet of a flood control levee. Under Alternative 1, the LRT tracks would be located within 50 feet of the Morrison Creek levee and would thus conflict with General Plan Policy EC 2.1.7, which prohibits new development within 50 feet of the landside toe of levees. Under the policy, development may encroach into this 50-foot area provided that "oversized" levee improvements are made to the standard levee section consistent with local, regional, state, and federal standards. Alternative 1 does not propose to make improvements to the levee, so the implementation of the alternative would conflict with the General Plan policy. Alternative 2, in contrast, would not conflict with the policy.

4.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 21100(b)(2)(B) of CEQA requires that any significant irreversible changes that would result from implementing the project be identified. Actions that may be considered significant and irreversible include uses of non-renewable resources during the construction and operational phases of a project; primary and secondary impacts that will commit future generations to similar use; and irreversible damage due to environmental accidents.

Alternative 2, Design Option C could be considered an irreversible change since the removal of 36 residences and the conversion of the area from residential uses to transportation uses would be essentially permanent. However, due to the limited number of residences that would be affected as compared to the larger neighborhood, as well as the identified environmental benefits of the project, this irreversible change would not be considered adverse or significant.

Each of the alternatives would require a commitment of construction materials, such as concrete, steel, lumber, and fabricated materials. This commitment would be considered irretrievable. However, due to the relatively small scale of the proposed modifications and the identified environmental benefits of the project, it would not be considered adverse or significant.

Each of the alternatives would also involve the use of potentially hazardous materials normally required for construction, operation, and maintenance of transit systems and vehicles. Environmental accidents stemming from the inadvertent release of these materials are not considered to be adverse or significant because of the minimal volumes and concentrations that would be used with implementation of either of

the two alternatives. In addition, federal and state regulations regulate the transport, storage, and use of these materials. Federal and state regulations also regulate specific actions to be taken in the event of an inadvertent release of these materials. Therefore, while environmental accidents may occur, they are not expected to result in irreversible damage to the public or to the environment.

4.4 GROWTH-INDUCING IMPACTS

Section 15126.2(d) of the State CEQA Guidelines require that an environmental document discuss “...the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.” NEPA regulations (40 CFR Section 1508.8) require the consideration of secondary and/or indirect effects that may include growth-inducing effects. Growth can be induced in a number of ways, including through the extension of urban services or transportation facilities into previously unserved or underserved areas, the elimination of obstacles to growth, or through the stimulation of economic activity within an area.

The previously approved Phase 2 Extension project, considered in this IS/EA as Alternative 1, would result in extension of light rail transit (LRT) service to South Sacramento and construction of the Morrison Creek Station, Franklin Boulevard Station, Center Parkway Station, and the southern terminus station at Cosumnes River College. As determined in Section 4.13.6 of the SFEIS/SFEIR, the Phase 2 Extension project would not induce unplanned growth in the South Sacramento Corridor and would be supportive of coherent and efficient land use patterns in the South Sacramento area.

Implementation of the proposed modifications to the Phase 2 Extension project, considered in this IS/EA as Alternative 2, would not create additional substantive track mileage used for passenger transit purposes or additional LRT stations that could help stimulate transit oriented development in areas surrounding these stations. Therefore, implementation of Alternatives 1 and 2 would not induce growth beyond that which has been projected and planned for by the City of Sacramento and regional planning organizations.

4.5 CUMULATIVE IMPACTS

The CEQA Guidelines (Section 15355) define “cumulative impacts” as “...two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” NEPA defines cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR Section 1508.7).

Analysis contained within Section 4.19 of the SFEIS/SFEIR found that the Phase 2 Extension project would result in no adverse or significant cumulative impacts. However, the SFEIS/SFEIR did find that *without* the Phase 2 Extension project, a number of adverse cumulative impacts and effects could result, most notably to air quality and traffic.

Since the construction and operation of the proposed modifications to the Phase 2 Extension project are essentially identical to Alternative 1 in terms of its physical effects, it is reasonable to conclude that the cumulative impacts associated with the implementation of Alternative 2 would be essentially identical as well. The implementation of Alternative 2 would also allow the realization of the identified project benefits, most notably benefits to air quality, reduced greenhouse gas emissions, lessened traffic and circulation impacts, and enhanced public mobility in the South Sacramento area. Based on these considerations, implementation of Alternative 1 or Alternative 2 would not result in cumulatively adverse or significant impacts.

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Section 5

Coordination and Comments

5.1 INTRODUCTION

The NEPA and CEQA environmental review processes are intended to ensure public awareness and to inform decision makers and the public of any potential environmental impacts resulting from implementation of the proposed modifications. The process also requires coordination with appropriate agencies jurisdictions, and organizations to receive their input on the environmental review process. This section outlines the coordination and public outreach efforts that have been undertaken by RT during preparation of this document.

5.2 PUBLIC OUTREACH EFFORTS

To initiate the environmental review process, RT conducted a public information meeting about the project and indicated that an IS/EA was being prepared. The purpose of the meeting, as described further below, was to inform the public of the proposed modifications and to solicit input on potential concerns, alternatives, and measures to reduce effects. The meeting was held in the project corridor on February 10, 2011 at the Susan B. Anthony Elementary School on Detroit Boulevard.

Notification about the meeting was provided via the following avenues:

- Nearly 15,000 postcard notifications were sent to area residents two weeks prior to the meeting. The postcards were in English, Spanish, and Hmong. The Spanish and Hmong text was re-written by native speakers of each language to provide the appropriate cultural context.
- Meeting flyers were hand delivered to the 47 households that may be affected by the proposed right-of-way acquisitions required for the proposed modifications.
- Certified letters were mailed to potentially affected homeowners within the proposed right-of-way.
- Details about the public information meeting were posted on the project website and RT's main website.
- Bus/Light Rail posters and take-away rack cards were developed and installed on RT's entire fleet of buses and trains.
- A-frame notices were posted at light rail stations along the Blue Line as well as key transfer points.
- Display ads were placed in the following local newspapers: Pocket News, Elk Grove Citizen, Sacramento Observer, and the Sacramento News and Review.
- A news release was distributed to the Sacramento Bee, Pocket News, Elk Grove Citizen, Sacramento Observer, and the Sacramento News and Review.

- Meeting notifications were shared with the City of Sacramento's Neighborhood Services Department for distribution to neighborhood/homeowners associations.
- City Council District offices were notified and information was distributed to respective constituencies.

The public scoping meeting started with an open house where members of the public and other interested parties could view exhibit boards with project information. This informal setting provided participants with an opportunity to ask questions of project team members with knowledge of the project objectives and the alternatives under consideration. The project team was available to answer questions during the open house and to encourage participants to submit written comments. A short presentation by RT staff provided an overview to the Phase 2 project, the rationale for the project modifications, the environmental review process, and the opportunities for further public input.

After the presentation, the open house session resumed. Members of the public were again encouraged to provide written input on the scope of the IS/EA. Approximately 50 people were present during the meeting, primarily area residents. No comment cards were submitted during the meeting, although members of the public were invited to submit comments via mail following the meeting. No mailed comments have been received. A number of questions were asked during the presentation. Most of these questions were informational in nature regarding the project modifications and the schedule for Phase 2 implementation. While these questions were answered directly during the course of the meeting by RT staff, information pertaining to these inquiries has also been included as appropriate in this IS/EA.

RT also attended a meeting of the Detroit Boulevard Neighborhood Association on April 13, 2011. The meeting was held at the Susan B. Anthony Elementary School on Detroit Boulevard. Approximately 140 members of the public were in attendance, and many audience members provided verbal comments during the session and solicited information. Input received during the course of this meeting has been included as appropriate in this IS/EA, specifically related to the relocation of the PG&E natural gas pipeline to Detroit Boulevard.

5.3 AGENCY CONSULTATION

RT undertook appropriate coordination efforts with applicable agencies with oversight over environmental issues associated with components of the project. These efforts were in addition to the broad coordination efforts that were undertaken previously for the project as part of the SFEIS/SFEIR process.

Consultations Pursuant to Section 106 of the National Historic Preservation Act

An updated Area of Potential Effect (APE) delineation for the proposed project modifications was prepared and submitted by FTA to the State Historic Preservation Officer (SHPO) on April 27, 2011. A copy of the correspondence is included in Appendix C of this IS/EA. The correspondence also included a Determination of No Historic Properties Affected. The determination was based upon negative findings obtained during records searches and surveys conducted within the updated APE. FTA requested that

SHPO concur with both the revised APE and the Determination of No Historic Properties Affected. To date, SHPO has not provided comment to FTA's request. Coordination with SHPO remains ongoing.

The Native American Heritage Commission (NAHC) was contacted to perform a Sacred Lands file search and contacts provided by NAHC were requested to share information, express concerns, and make recommendations regarding the project. To date, the NAHC has not responded. There are no federally-recognized tribes within the project area. During previous coordination with the NAHC conducted during preparation of the SFEIS/SFEIR, no Sacred Lands were identified in the project vicinity. One Native American contact requested additional information; this information was provided. RT and FTA will continue to coordinate with NAHC and will make appropriate consultation efforts with interested tribal groups as appropriate.

U.S. Fish and Wildlife Service Coordination

The U.S. Fish and Wildlife Service (USFWS) was contacted to determine if additional threatened or endangered species beyond those considered in the SFEIS/SFEIR are likely to occur in the area. The USFWS response letter is included in Appendix B of this IS/EA. A review of the updated list provided by USFWS found that the project areas for both Alternative 1, the No Project Alternative, and Alternative 2, the Modifications to the Phase 2 Extension Project Alternative, do not contain any listed species with habitat that have not already been addressed in the previously approved SFEIS/SFEIR.

5.4 PUBLIC REVIEW OF THIS ENVIRONMENTAL DOCUMENT

Draft IS/EA

Based on the input received from outreach, scoping, and community meetings, RT has prepared this IS/EA to identify potential effects from the proposed modifications to the Phase 2 project. The analysis describes temporary and long-term effects, as well as secondary indirect effects. As appropriate, mitigation measures have been recommended to reduce the identified adverse effects. A 30-day public review period is being provided for the public and agencies to comment on the document, its accuracy, its characterization of potential effects, and the effectiveness of the recommended mitigations.

During the public review period, RT will hold an additional public meeting in the project corridor to allow members of the public to comment on the IS/EA and the project alternatives. The public outreach and meeting notification efforts for this meeting will follow the same process as outlined above for the February 2011 meeting. Information about the meeting, as well as other methods by which the public can provide input on the IS/EA during the public comment period, is provided in the Notice of Availability which is included with this IS/EA.

In addition, during the public review period of this IS/EA, the RT Board will also hold a public meeting on the matter. Information about that meeting is also provided in the Notice of Availability which is included with this IS/EA.

Final IS/EA and Notice of Determination and Finding of No Significant Impact

Following the public review period and the public meeting, RT will review the comments received on the IS/EA and the NOI. If necessary, revisions to the IS/EA will be made and RT will determine whether the IS adequately satisfies the requirements of CEQA and whether any mitigation measures identified in the IS should be adopted in the form of a Mitigated Negative Declaration. Assuming that the Board elects to approve the project, a Notice of Determination will be filed with the County Clerk and the State Clearinghouse to indicate the Board's decision. FTA, as the lead federal agency under NEPA, will similarly consider the comments and responses, and determine whether significant or adverse environmental effects are likely to result from the project. If the FTA determines that no significant impacts are identified, then FTA would issue a Finding of No Significant Impact.

5.5 DISTRIBUTION LIST

The following agencies, organizations, and individuals will receive a copy of the Notice of Availability for this IS/EA. Copies of the IS/EA will be forwarded to all agencies, organizations, and individuals who request it. In addition, the IS/EA will be available for download and review on RT's website at: www.slp2.org.

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U.S. Army Corps of Engineers
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U.S. Fish and Wildlife Service
2800 Cottage Way W-2605
Sacramento, CA 95825-1846

U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

State Agencies

Executive Secretary
Native American Heritage Commission
915 Capitol Mall, Room 288
Sacramento, CA 95814

Real Estate Services Division
Department of General Services
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Office of Planning and Research
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California Department of Fish and Game
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Central Valley Regional Water Quality Control Board
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Sacramento Metro Air Quality Management District
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County of Sacramento Health Department 700 H Street, Room 5650 Sacramento, CA 95814	County of Sacramento Department of Public Works 827 7th Street, Room 304 Sacramento, CA 95814
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Sacramento Municipal Utility District 6701 4th Avenue Sacramento, CA 95816	Director City of Sacramento Dept of Parks & Community Service 1231 "I" Street, Room 400 Sacramento, CA 95814
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Sacramento Housing Redevelopment Agency
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Sacramento, CA 95814

Steve Cohn
Council member
City of Sacramento
915 'T' Street, Room 205
Sacramento, CA 95814

Kevin Johnson
Mayor
City of Sacramento
915 'T' Street, Room 205
Sacramento, CA 95814

Jay Schenirer
Council member
City of Sacramento
915 'T' Street, Room 205
Sacramento, CA 95814-2672

Kevin McCarty
Council member
City of Sacramento
915 'T' Street, Room 205
Sacramento, CA 95814

Darrel Fong
Council member
City of Sacramento
915 'T' Street, Room 205
Sacramento, CA 95814

Bonnie Pannell
Vice Mayor
City of Sacramento
915 'T' Street, Room 205
Sacramento, CA 95814-2672

Jimmie Yee
Supervisor
Sacramento County
700 'H' Street, Room 2450
Sacramento, CA 95814-1298

Susan Peters
Supervisor
Sacramento County
700 'H' Street, Room 2450
Sacramento, CA 95814-1280

Roberta MacGlashan
Supervisor
Sacramento County
700 'H' Street, Room 2450
Sacramento, CA 95814-1298

Don Nottoli
Supervisor
Sacramento County
700 'H' Street, Room 2450
Sacramento, CA 95814

Organizations and Individuals

Property acquisition is required for each of the alternatives presented in this IS/EA. All affected property owners have been delivered a copy of the Notice of Availability for this IS/EA via certified mail. For privacy reasons, the names and addresses of these persons have not been included here.

In addition, approximately 15,000 notices announcing the availability of the Draft IS/EA have been mailed via regular surface mail to all property owners of record in the vicinity of the Phase 2 Extension project area. For purposes of brevity, the names and addresses of these persons and businesses have not been included here.

Section 6

List of Preparers

6.1 LEAD AGENCIES

Federal Transit Administration (FTA) - Federal Lead Agency

- Leslie T. Rogers, Regional Administrator
- Jerome Wiggins, Transportation Program Specialist, Region IX
- Debra Jones, Environmental Protection Specialist, Region IX

Sacramento Regional Transit District – Local Lead Agency

- Diane Nakano, Assistant General Manager of Engineering and Construction
- Ed Scofield, Director, Project Management
- Jenny Niello, Senior Civil Engineer

6.2 ENVIRONMENTAL PLANNING CONSULTANTS

Atkins North America, San Francisco, California

Responsible for overall technical coordination and technical analyses of all issue areas.

- Rod Jeung, AICP, B.A., Economics; M.R.P., City and Regional Planning – 30+ years of experience. Project Director responsible for overall technical review and coordination.
- Luke Evans, B.A., History and Religious Studies; M.S., Environmental and Natural Resources Policy – 14 years of experience. Project Manager responsible for compilation of environmental document and technical studies.
- Natalie Irwin, B.A., Integrative Biology; M.S., Environmental Analysis and Decision Making – 6 years of experience. Prepared population and housing analysis and assisted in project coordination.
- Carolina Morgan, M.S., Environmental Science and Management – 7 years of experience. Prepared the Water Resources and Hazardous Materials analyses and assisted in project coordination.
- Matthew Berke, B.S., Environmental Policy Analysis and Planning – 1 year of experience. Prepared the aesthetics, air quality, climate change, land use, and environmental issues not subject to further evaluation analyses.

- Anthony Ha, B.A., English – 7 years of experience. Responsible for document formatting and production, including graphics and tables.
- Jackie N. Ha, A.A., Business Administration – 11 years of experience. Responsible for production coordination and publication.
- Geoff Hornek, B.A. Physics; M.S., Applied Science/Engineering – 20 years of experience. Prepared noise and vibration analysis.
- Nicole Keeler, B.A., Social Sciences: Environmental Studies and Health Science – 1 year of experience. Conducted noise monitoring.
- Paul Pribor, GISP, CFM, B.A., English; M.A., Geography: Resource Management and Environmental Planning – 9 years of experience. Prepared exhibits and compiled GIS data.
- Magdalena S. Visser, GISP, B.A., Sociology; M.A., Town and Regional Planning – 14 years of experience. Prepared environmental justice analysis.

ATS Consulting, Los Angeles, California

Responsible for vibration modeling and data compilation.

- Hugh Saurenman, PhD., Mechanical Engineering – 35 year of experience. Prepared the vibration analysis.

Kleinfelder West, Inc., Sacramento, California

Responsible for Phase 1 Environmental Site Assessments.

- Pamela A. Wee, B.A., Biology; M.A., Biology; D. Env., Environmental Science/Engineering; REA II – 28 years of experience. Oversaw production of Phase 1 Environmental Site Assessments for affected properties.
- Christina Ryan, B.S., Environmental Science; REA I – 10 years of experience. Responsible for preparation and technical review of Phase I Environmental Site Assessment.
- Lisa S. Raffetto, B.A., International Studies/Environmental Science – 5 years of experience. Responsible for data collection and data management for Phase 1 Environmental Site Assessments.



South Sacramento Corridor Light Rail Project Phase 2 Extension Project Modifications

SCH Number: 1996052075

Document Type: NOD - Notice of Determination

Alternate Title: South Sacramento Corridor Phase 2 Light Rail Extension Project South Sacramento Corridor Phase 2 Project South Sacramento Corridor

Project Lead Agency: Sacramento Regional Transit District

Project Description

Modifications to the approved South Sacramento Corridor Light Rail Phase 2 Extension Project (Blue Line) described as Alternative 2, including: 1) realignment of the proposed along a 0.75 portion of the alignment (Design Option A); 2) adjustment to RT right-of-way to increase distance from the Morrison Creek Levee; 3) relocation of Traction Power Substation No. 10 across Franklin Boulevard; and 4) extension of tailtracks at Cosumnes River College Station by ~400 feet.

Contact Information

Primary Contact:

Diane Nakano
Sacramento Regional Transit
District
916 321-3854
1400 29th Street
Sacramento, CA 95821

Project Location

County: Sacramento
City: Sacramento, Elk Grove
Region:
Cross Streets: Meadowview Road/Detroit Boulevard
Latitude/Longitude: 38° 28' 53" / 121° 27' 59" [Map](#)
Parcel No: Multiple
Township: 7N
Range: 5E
Section: 7
Base: MDB&M
Other Location Info:

Determinations

This is to advise that the ☒ Lead Agency ☐ Responsible Agency
Sacramento Regional Transit District has approved the project described above on 9/26/2011
and has made the following determinations regarding the project described above.

1. The project ☐ will ☒ will not have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures ☒ were ☐ were not made a condition of the approval of the project.
4. A Statement of Overriding Considerations ☐ was ☒ was not adopted for this project.
5. Findings ☒ were ☐ were not made pursuant to the provisions of CEQA.

Final EIR Available at: Sac Regional Transit District 1400 29th Street Sacramento, CA 95812

Date Received: 9/28/2011

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REGIONAL TRANSIT ISSUE PAPER

Page 1 of 2

Agenda Item No.	Board Meeting Date	Open/Closed Session	Information/Action Item	Issue Date
15	10/27/08	Open	Action	10/02/08

Subject: Approving Resolution Certifying the Final Environmental Impact Report for the South Sacramento Corridor Phase 2 Light Rail Extension Project

ISSUE

Whether to approve Resolution Certifying the Final Environmental Impact Report for the South Sacramento Corridor Phase 2 (SSCP2) light rail extension Project.

PROPOSED ACTION

Adopt Resolution No. 08-10-____ Certifying the Final Environmental Impact Report, Making Findings of Overriding Considerations, Approving the Project, And Directing Filing of the Notice of Determination for the South Sacramento Corridor Phase 2 (SSCP2) Light Rail Extension Project.

FISCAL IMPACT

None as a result of this action.

DISCUSSION

In September 2008, the Sacramento Regional Transit District (RT) prepared a Supplemental Final Environmental Impact Statement/Subsequent Final Environmental Impact Report (Final EIS/EIR) for the SSCP2 Light Rail Extension Project. The document was prepared in accordance with the provisions of the California Environmental Quality Act (CEQA).

A Notice of Intent to Prepare an EIS was published in the Federal Register on March 8, 2002 and a Notice of Preparation was distributed in early March of the same year. Public scoping meetings were held on March 25 and April 11, 2002.

A public hearing was held on the Supplemental Draft Environmental Impact Statement/Subsequent Draft Environmental Impact Report (Draft EIS/EIR) during the RT Board meeting on March 12, 2007.

The Draft EIS/EIR was distributed directly to the appropriate federal, state and local agencies for review and comments. Public availability in the Sacramento area was noticed through direct mailing, bus and rail vehicle rack cards, direct mailings to all elected officials with jurisdictions in the vicinity of the proposed project, and press releases to and advertisements in local special interest newspapers and newspapers of general circulation. RT posted the Draft EIS/EIR on its web site for public access.

This Supplemental Final Environmental Impact Statement/Subsequent Final Environmental Impact Report (Final EIS/EIR) revises portions of the Draft EIS/EIR and provides responses to comments on the Draft EIS/EIR.

Approved:


General Manager/CEO

Presented:


Taiwo Jaiyeoba, Director of Project Management

REGIONAL TRANSIT ISSUE PAPER

Page 2 of 2

Agenda Item No.	Board Meeting Date	Open/Closed Session	Information/Action Item	Issue Date
15	10/27/08	Open	Action	10/02/08

Subject: Approving Resolution Certifying the Final Environmental Impact Report for the South Sacramento Corridor Phase 2 Light Rail Extension Project

Under CEQA, if a project may have a significant adverse effect on the environment, the Board is required to make findings with respect to each significant effect that are either: (1) changes or alterations that are incorporated into the project which will mitigate or avoid such effect; (2) changes or alterations that are needed to mitigate the effect which are within the responsibility of another agency; or (3) specific economic, legal, social, technological or other considerations that make infeasible the mitigation measures or project alternatives which would lessen or avoid such effect.

The resolution contains the following provisions: (1) certifies the Final EIR; (2) approves the project; (3) makes findings for each significant effect; (4) adopts a Mitigation Monitoring Program; (5) directs staff to file a Notice of Determination for the Final EIR; and (6) authorizes payment of the required Fish and Game filing fee.

The resolution certifying the Final EIR lists all of the environmental impacts which were found to be significant and the mitigation measures RT will adopt to reduce such impacts to less than significant and/or a statement of overriding considerations for impacts which are unavoidable and which are infeasible to mitigate to a less than significant level. The mitigation measures adopted by RT will become a part of the project. These impacts and mitigation measures are summarized in the attached table (Attachment 1).

Staff recommends that the Board approve the attached resolution which certifies the FEIR; approves the project; makes findings for each significant effect; adopts a Mitigation Monitoring Program; directs staff to file a Notice of Determination for the FEIR; and authorizes payment of the required Fish and Game filing fee.

ADDENDUM/ERRATA

To

**Supplemental Final Environmental Impact Statement /
Subsequent Final Environmental Impact Report for the
South Sacramento Corridor Phase Project**

October 2008

Attached are replacement pages for the Supplemental Final Environmental Impact Statement/Subsequent Environmental Impact Report (SFEIS/SFEIR) for the South Sacramento Corridor Phase 2 Project. The replacement pages merely make technical corrections conforming numbers with the correct numbers that appear elsewhere in the document.

These minor technical corrections are appropriately addressed in the attached Addendum/Errata included as part of the SFEIS/SFEIR. The corrections do not constitute changes in the proposed Project and do not result in new or increased adverse environmental impacts. Additionally, the corrections do not result in any changes in the circumstances under which the Project will be pursued that would require changes in the proposed Project and do not make feasible any alternatives or mitigation strategies that were considered infeasible. The minor technical changes contained in the Addendum/Errata do not meet the criteria for preparation of a supplement to or for recirculation of the SFEIS/SFEIR.

Table S-2: Summary of Long-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)
Biological Resources Section 4.4	No impact.	<p>No impact to wetlands or other waters of the U.S.</p> <p>Up to 2.014.96 acres of <i>potential</i> 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>B-5; B-6 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 0.311 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 0.700.34 and 63.3466.85 acres of nesting and foraging habitat for 13 special-status bird species would be affected. Possible loss of Valley oaks (<i>Quercus lobata</i>), interior live oak (<i>Quercus wislizenii</i>), and blue oak (<i>Quercus douglasii</i>) from SRCSD Bufferlands. Trees planted in 1995 as part of the Trail of Trees effort.</p> <p><u>Mitigation measures:</u></p> <p>B-1 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.</p> <p>B-2 Transplant directly affected elderberry shrubs and purchase the appropriate number of beetle habitat credits at a USFWS-approved conservation bank prior to ground breaking.</p> <p>B-3 Purchase equivalent of 9.823 acres of giant garter snake habitat credits from a USFWS-approved conservation bank.</p> <p>B-4 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 SFEIS/SFEIR	No-Action Alternative	Transportation Systems Management (TSM) Alternative	Locally Preferred Alternative Phase 2 (LPAP2)
			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.
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 54.4 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 and 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.

accommodation and relocation of the existing SMUD facilities and the potential for aerially deposited lead (ADL), polychlorinated biphenyls (PCBs) in transformers and heavy metals.

Sampling and testing of identified areas will be conducted, as required, for some of the above projects. Worker health and safety plans implemented during construction for all projects should ensure, however, that there will be no harmful exposure to humans or the environment from hazardous materials and waste. Thus there would be no cumulative impact.

4.19.4.6 OTHER IMPACTS

For cultural resources, the proposed project would have no impact. For geology and soils and water quality, the alternatives would have no impact after application of design requirements and best practices. For public services and facilities and parks and recreation, there would be beneficial impacts. In the absence of specific information on the related projects, these impacts are not considered further for contribution to cumulative impacts.

4.19.5 Phase 3

Given that the mode (e.g., LRT vs. BRT) and alignment (e.g., Bruceville Road vs. Cotton Lane) for Phase 3 will be the subject of a future alternatives analysis and environmental evaluation, the impacts of Phase 3 are not reasonable foreseeable at this point. Cumulative impacts of LPAP2 and Phase 3 cannot be defined at this point, therefore.

4.20 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The No-Action Alternative would not directly involve the use of resources, except insofar as it would include planned and programmed capital improvements, which require money, materials, and labor to construct. The TSM Alternative and the LPAP2 would also include capital improvements, which would require money, materials, and labor. If construction cost is a general indicator of the magnitude of resources required for each alternative, then the resources required for the LPAP2 (approximately \$270 million in YOY) is approximately \$216 million more than the estimated TSM Alternative costs and approximately \$270 million more than the No-Action alternative.

The LPAP2 would also require an irretrievable conversion of 5.6 acres of farmland and use of ~~0.340.311~~ acres of jurisdictional wetlands. There would be permanent impacts to 0.14 acres of seasonal wetlands that provide suitable habitat for four vernal pool crustaceans. Up to 0.04 acre of suitable habitat for giant garter snake and ~~0.700.34~~ to ~~63.34~~ ^{66.85} acres of nesting/foraging habitat for 13 special-status bird species would be used by the LPAP2. These uses would not result in jeopardy to the survival of any of the species affected. Compensation measures to be specified in consultation with the resource agencies would ensure no net loss of wetlands, provide for replacement habitat, and ensure implementation of measures to minimize harm to the species.

Because the LPAP2 and the TSM Alternative would reduce vehicle miles of travel within the region when compared to the No-Action Alternative, they would also reduce the level of vehicular fossil fuel consumption, with a greater reduction anticipated from the LPAP2. Operation of the light rail transit service on the LRT alignment would require the use of electricity for power and would have greater propulsion energy requirements than the No-Action and the TSM Alternatives, although the LPAP2 is expected to carry more passengers than the TSM Alternative.

Table 6.3-1: Summary of Impacts and Proposed Mitigation for the TSM and LPAP2 Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
4.2.2 Agricultural Impacts			
<ul style="list-style-type: none"> The LPAP2 would require approximately 5.6 total acres of farmland. Approximately 3.6 acres of farmland would be required for the LPAP2 LRT alignment and 2.0 acres for the Morrison Creek Station and PNR lot. <i>(Additionally, 19.1 acres of SRCSD Bufferlands, currently used for cattle grazing would be affected)</i> These areas of farmland are not under a Williamson Act contract and are located adjacent to urbanized areas and most of the total farmland area that would be taken for the project is zoned for uses other than agriculture. 	LS	No mitigation is indicated.	LS
<ul style="list-style-type: none"> 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. 	LS		LS
4.3.3.2 AIR QUALITY IMPACTS: TSM ALTERNATIVE			
<ul style="list-style-type: none"> Regional criteria pollutant emissions are projected to decrease by 61.827.1 pounds per day (ppd) for CO, 3.41.5 ppd for ROG, 13.25.1 ppd for NO_x, 0.3 1 ppd for SO_x, 0.6 ppd for PM_{2.5} and 2.30.6 ppd for PM₁₀, respectively, when compared to the No-Action Alternative. 	B	No mitigation is indicated.	B
<ul style="list-style-type: none"> Small localized increases in CO would result, but are not anticipated to exceed the State one- and eight-hour standards, and no impacts to sensitive receptors are expected. 	LS		LS
<ul style="list-style-type: none"> The PNR lot CO hot spot analysis indicated that automobile use at the PNR lot would not produce emissions that exceed State or federal CO standards. 	LS		LS
<ul style="list-style-type: none"> The PM₁₀ hot spot analysis indicated that PM₁₀ emissions from the idling of TSM buses would not exceed State or 	LS		LS

Table 6.3-1: Summary of Impacts and Proposed Mitigation for the TSM and LPAP2 Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
<p>federal PM₁₀ standards.</p> <ul style="list-style-type: none"> Greenhouse gas emissions would decrease when compared to the No-Action Alternative, and no impact to global warming is anticipated. 	B		B
<p>4.3.3.3 AIR QUALITY IMPACTS: LPAP2</p> <ul style="list-style-type: none"> Regional criteria pollutant emissions would decrease by 134.988.1 ppb for CO, 5.84.9 ppb for ROG, 22.416.5 ppb for NO_x, 0.4 ppb for SO_x, 1.9 for PM_{2.5}, and 3.92.1 ppb for PM₁₀, when compared to the No-Action Alternative. Small localized increases in CO would result, but are not anticipated to exceed the State one- and eight-hour standards, and no impacts to sensitive receptors are expected. The PNR Lot CO hot spot analysis indicated that automobile use at PNR lots would not produce emissions that would exceed State or federal CO standards. The PM₁₀ hot spot analysis indicated that emissions from the idling of buses at stations would not exceed State or federal PM₁₀ standards. Greenhouse gas emissions would decrease when compared to the No-Action Alternative, and no impact to global warming is anticipated. 	<p>B</p> <p>LS</p> <p>LS</p> <p>LS</p> <p>B</p>	<p>No mitigation is indicated</p>	<p>B</p> <p>LS</p> <p>LS</p> <p>LS</p> <p>B</p>

Table 6.3-1: Summary of Impacts and Proposed Mitigation for the TSM and LPAP2 Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
4.4 BIOLOGICAL RESOURCES			
<u>TSM Alternative</u>			
• No impact to wetlands or other waters of the U.S.	N	<u>TSM:</u> No Mitigation Necessary	N
• Loss of up to 2.0 14.96 acres of suitable habitat for western burrowing owl.	LS	B-5;B-6 Permanent impacts to western burrowing owl burrows and foraging habitat will be mitigated through purchase of credits at a CDFG-approved mitigation bank.	LS
<u>LPAP2</u>			
• Loss of 0.311 acres of jurisdictional wetlands.	PS	<u>LPAP2:</u> B-1 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.	LS
• Loss of up to 0.14 acres of seasonal wetlands that provides suitable habitat for vernal pool fairy shrimp, midvalley fairy shrimp, vernal pool tadpole shrimp, and California linderiella.	S	B-2 Transplant directly affected elderberry shrubs and purchase the appropriate number of beetle habitat credits at a USFWS-approved conservation bank prior to ground breaking.	LS
• Loss of up to 0.04 acre of habitat suitable for western pond turtle and giant garter snake.	S	B-3 Purchase equivalent of 9.823 acres of giant garter snake habitat credits from a USFWS-approved conservation bank.	LS
• Disturbance of between 0.70 0.34 to 63.34 66.85 acres of nesting and foraging habitat for 13 special-status bird species.	PS	B-4 Consult with SRCSD Bufferlands manager to explore opportunities to compensate for impacts to nesting and foraging habitat for special-status bird species.	LS

Table 6.3-1: Summary of Impacts and Proposed Mitigation for the TSM and LPAP2 Alternatives

Impact	Significance	Mitigation	Significance After Mitigation
4.10 LAND USE AND PLANNING			
<u>TSM Alternative</u>			
<ul style="list-style-type: none"> Consistent with local and regional plan goals that promote transit use. Acquisition of approximately 16.7 acres of land to construct one bus PNR lot. 	LS	No mitigation is indicated.	LS
<u>LPAP2</u>			
<ul style="list-style-type: none"> Consistent with the land use and development objectives of local development plans and policy: to promote a transit system that influences growth into efficient and coherent patterns to improve the region's economy, land use, air, and quality of life. The South Sacramento Corridor Phase 2 Project is included in the California State Transportation Improvement Program, SACOG's Metropolitan Transportation Plan, Sacramento County General Plan, City of Sacramento General Plan, Airport-Meadowview Community Plan, and the South Sacramento Community Plan, all of which promote preservation of rights-of-way for future LRT use and land use policy decisions that support the extension of the light rail system. Supportive land use planning would encourage compact development around station locations and promote maximum compatibility and coordination with the light rail system and area land uses. An estimated 54.4 acres would be required for construction of the LPAP2 alignment, stations, and PNR lots. 	B	No mitigation is indicated.	B
<ul style="list-style-type: none"> Approximately 6.314.6 acres of CRC property and 11.419.1 acres of SRCSD bufferlands would be converted to public right-of-way. An additional 8.9 acres would come from the UPPR. 	LS		LS

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FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT
SACRAMENTO REGIONAL TRANSIT DISTRICT**

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SACRAMENTO REGIONAL TRANSIT DISTRICT

FINAL ENVIRONMENTAL IMPACT STATEMENT /

FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT



RESOLUTION NO. 08-10-0145

EXHIBIT A: FINDINGS OF FACT;

EXHIBIT B: STATEMENT OF OVERRIDING CONSIDERATIONS; AND

EXHIBIT C: MITIGATION MONITORING PROGRAM



October 27, 2008

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RESOLUTION NO. 08-10 - 0145

Adopted by the Board of Directors of the Sacramento Regional Transit District on the date of:

October 27, 2008

**CERTIFYING THE SUBSEQUENT FINAL ENVIRONMENTAL IMPACT REPORT,
MAKING FINDINGS OF OVERRIDING CONSIDERATIONS,
APPROVING THE PROJECT, AND DIRECTING FILING OF
THE NOTICE OF DETERMINATION FOR
THE SOUTH SACRAMENTO CORRIDOR PHASE 2 PROJECT**

The Board of Directors of the Sacramento Regional Transit District does resolve as follows:

Section 1. Procedures. The Board of Directors of the Sacramento Regional Transit District finds as follows:

A. A Draft and Final Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report ("SDEIS/R" and "SFEIS/R") were prepared by and for the Sacramento Regional Transit District ("Regional Transit") for the South Sacramento Corridor Project (the "Project") pursuant to the California Environmental Quality Act ("CEQA") (Public Resources Code §21000 et seq.); the Guidelines for Implementation of the California Environmental Quality Act (14 Cal. Code Regs. §15000 et seq.) ("Guidelines"); and the local procedures adopted by Regional Transit pursuant thereto.

B. The Notice of Preparation for the SDEIS/R was sent to each Responsible Agency, Trustee Agency, and federal agency in compliance with Section 15082 of the Guidelines.

C. The Notice of Completion for the SDEIS/R was forwarded to the Office of Planning and Research pursuant to Section 15085 of the Guidelines.

D. Regional Transit consulted with and requested comments on the SDEIS/R from Responsible Agencies, Trustee Agencies, and other federal, state and local agencies in compliance with Section 15086 of the Guidelines.

E. A Notice of Availability of the SDEIS/R was published in a newspaper of general circulation in the area affected by the Project. Copies of the SDEIS/R were furnished to federal, state, regional and local agencies and to all libraries in the affected area. A public hearing was properly noticed and held on March 12, 2007 to solicit comments on the SDEIS/R during a 45 day review period in compliance with Section 15087 of the Guidelines.

F. The SDEIS/R was thereafter revised, responses to comments received on the SDEIS/R were addressed, and a list of persons, organizations and public agencies

commenting on the SDEIS/R was prepared pursuant to Sections 15088 and 15089 of the Guidelines.

G. The SDEIS/R, the revisions to the SDEIS/R, the comments on the SDEIS/R, the list of persons, organizations and public agencies commenting on the SDEIS/R, and the responses to comments on the SDEIS/R together comprise the SFEIS/R pursuant to Section 15132 of the Guidelines.

Section 2. Administrative Record. The Regional Transit Board of Directors finds as follows:

A. On March 12, 2007, the Regional Transit Board of Directors conducted a noticed public hearing on the SFEIS/R in conjunction with its hearing on the Project. The record of this hearing includes only the following as submitted to and considered by the Board of Directors:

(1) The SFEIS/R, which includes the addendum/errata to the SFEIS/R, changes to the SDEIS/R, the SDEIS/R and written comments received during the public comment period and responses thereto;

(2) All staff reports, memoranda, maps, letters, minutes of meetings, and other documents prepared by Regional Transit staff relating to the Project and presented to the Board of Directors at its hearing on the SDEIS/R;

(3) The proceedings before the Regional Transit Board of Directors relating to the Project and SDEIS/R and SFEIS/R, including testimony and documentary evidence introduced at the public hearings, the transcript of all hearings of the Regional Transit Board of Directors related to this matter, and the official minutes of such meetings;

(4) This Regional Transit Resolution.

(5) The Mitigation Monitoring Program for the Project.

B. The SFEIS/R reflects the independent judgment of the Regional Transit Board of Directors.

Section 3. Certification of the Final EIR. Pursuant to Section 15090 of the Guidelines, the Regional Transit Board of Directors hereby certifies that the SFEIS/R for the Project has been completed in compliance with CEQA, the Guidelines, and local procedures adopted by the Regional Transit pursuant thereto, and that the Board of Directors has reviewed and considered the information contained in the SFEIS/R prior to making a determination on the Project.

Section 4. Mitigation of Significant or Potentially Significant Impacts. The significant and potentially significant environmental impacts, including cumulative impacts, and the

mitigation measures for the Project which will mitigate the impacts to a less than significant level are set out in Exhibit A, attached hereto and by this reference incorporated herein. These impacts are identified in the SFEIS/R or have otherwise been identified by the Regional Transit Board of Directors. Pursuant to Section 21081(a) of CEQA and Section 15091 of the Guidelines, as to each such impact, the Regional Transit Board of Directors, based on the evidence in the record before it, finds that changes or alterations incorporated into the Project mitigate, avoid or substantially lessen to a level of insignificance these significant or potentially significant environmental impacts of the Project. The basis for the finding for each identified impact is set out in Exhibit A.

Section 5. Mitigation Measures Found to Be Infeasible. Certain other significant and potentially significant environmental impacts, including cumulative impacts, which may be mitigated, avoided or substantially lessened by proposed mitigation measures are set out in Exhibit A. Pursuant to Section 21081(c) of CEQA and Section 15091(a)(3) of the Guidelines, as to each such impact and mitigation measure, the Regional Transit Board of Directors, based on the evidence in the record before it, specifically finds that the mitigation measures are infeasible. Each impact and mitigation measure and the facts supporting the finding of infeasibility of each mitigation measure are set out in Exhibit A. Notwithstanding these impacts and the finding of infeasibility, the Regional Transit Board of Directors elects to approve the Project due to the overriding considerations set forth in the Statement of Overriding Considerations attached as Exhibit B and by this reference incorporated herein, and referenced below in Section 8.

Section 6. Significant and Unavoidable Impacts. Certain other significant and potentially significant environmental impacts, including cumulative impacts, of the Project are unavoidable, and cannot be mitigated in a manner that would substantially lessen the significant impact. These impacts are set out in Exhibit A. Notwithstanding these impacts, the Regional Transit Board of Directors elects to approve the Project due to overriding considerations as set forth in the Statement of Overriding Considerations attached as Exhibit B, and referenced below in Section 8.

Section 7. Project Alternatives. The Regional Transit Board of Directors has considered the Project alternatives discussed in the SFEIS/R and presented during the comment period and public hearing process. Some of these alternatives have the potential to avoid or reduce certain significant or potentially significant environmental impacts, as set out in Exhibit A. The Regional Transit Board of Directors specifically finds these alternatives to be infeasible. Each alternative and the facts supporting the finding of infeasibility of each alternative, are set out in Exhibit A.

Section 8. Statement of Overriding Considerations. The Regional Transit Board of Directors, pursuant to Guidelines Section 15092, finds that in approving the Project it has eliminated or substantially lessened all significant and potentially significant effects of the Project on the environment where feasible, as shown in Sections 4 through 7 of this Resolution. The Regional Transit Board of Directors further finds that the remaining unavoidable significant and potentially significant impacts are acceptable, and makes this Statement of Overriding Considerations in accordance with Section 15093 of the

Guidelines. For the reasons set out in Exhibit B, the Regional Transit Board of Directors finds that the benefits of the Project outweigh the unavoidable adverse impacts which may result from the Project, and the overriding considerations set out in Exhibit B support approval of the Project.

Section 9. Mitigation Monitoring Program. The Mitigation Monitoring Program for this Project as set out in Exhibit C, attached hereto and incorporated herein by this reference, is hereby approved and adopted. Staff is hereby authorized and directed to implement the Mitigation Monitoring Program pursuant to its provisions.

Section 10. Project Approval. The Project is hereby approved and staff is hereby directed to file a Notice of Determination with the County Clerk of Sacramento County and, if the Project requires a discretionary approval from any state agency, with the State Office of Planning and Research, pursuant to the provisions of Section 21152 of the Public Resources Code and the Guidelines.

Section 11. Custodian of Records. The documents and other materials that constitute the record of proceedings upon which the Board of Directors has based its decision are located in the office of the Clerk to the Board, 1400 29th Street, Sacramento, California 95816. The custodian of these documents and other materials is the Regional Transit Clerk of the Board.


ROBERTA MACGLASHAN, Chair

A T T E S T:

MICHAEL R. WILEY, Secretary


By: 
Cindy Brooks, Assistant Secretary

EXHIBIT A

CEQA FINDINGS OF FACT

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT/FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

SACRAMENTO REGIONAL TRANSIT DISTRICT

October 27, 2008

I. INTRODUCTION

The California Environmental Quality Act, Public Resources Code section 21000 et seq. ("CEQA"), states that if a project would result in significant environmental impacts it may be approved, if feasible mitigation measures or feasible alternatives are proposed which avoid or substantially lessen the impact or if there are specific economic, social, or other considerations which justify approval notwithstanding unmitigated impacts.

Therefore, when an environmental impact report ("EIR") has been completed that identifies one or more potentially significant or significant environmental impacts, the approving agency must make one or more of the following findings for each identified significant impact:

1. Changes or alternatives which avoid or substantially lessen the significant environmental effects as identified in the EIR have been required or incorporated into the project; or
2. Such changes or alternatives are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency; or
3. Specific economic, social or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR. (Pub. Resources Code, § 21081).

As "lead agency" under California Code of Regulations, title 14, section 15367, the Sacramento Regional Transit District ("Regional Transit" or "RT") hereby adopts the following CEQA findings relating to: South Sacramento Corridor Phase 2 Supplemental Draft Environmental Impact Statement/Subsequent Draft Environmental Impact Report dated January 2007 ("SDEIS/R") and Supplemental Final Environmental Impact Statement/Subsequent Final Environmental Impact Report dated September 2008 ("SFEIS/R").

II. PURPOSE AND BACKGROUND

The Project

These findings relate to an overall project, the “South Sacramento Corridor Phase 2” or the “Locally Preferred Alternative Phase 2” (hereinafter referred to as “LPAP2” or “the Project”). RT proposes to extend light rail transit (“LRT”) service 4.3 miles from the South Sacramento Corridor Phase 1 terminus at Meadowview Road southward along the Union Pacific Railroad (“UPRR”) right-of-way, turning east crossing the UPRR and Union House Creek, continuing east to the north of the proposed extension of Cosumnes River Blvd. (“CRB”), crossing Franklin Boulevard, traveling along the northern side of CRB. After crossing Center Parkway, the alignment remains along the north edge and then crosses over CRB on a flyover bridge and would turn south on the west side of Bruceville Road, terminating at Cosumnes River College (“CRC”). LPAP2 includes four new stations at: (a) Morrison Creek, (b) Franklin, (c) Center Parkway, and (d) CRC. Three new park-and-ride lots would provide over 2,700 spaces: (a) Morrison Creek with 50 spaces, (b) Franklin with 650 spaces, and (c) CRC with 2000 spaces.

Purpose of the Project

The purpose of LPAP2 is to improve public transit services in the fast-growing South Sacramento Corridor to provide faster, more convenient access between South Sacramento and downtown Sacramento as well as to other corridor activity centers. Meeting this primary project purpose would also address the following related purposes that were developed from the original goals and objectives of the South Sacramento Corridor, as defined in the original corridor environmental document. Subsection 7.7.1 of the SFEIS/R, Goals and Objectives, presents a comprehensive set of the original goals and objectives from the *1994 South Sacramento Corridor AA/DEIS/DEIR*. These are summarized as follows:

- 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.

Purpose of the Environmental Impact Statement/Report ("EIS/R")

Pursuant to Public Resources Code section 21000 et seq., and the CEQA Guidelines, California Code of Regulations, title 14, section 15000 et seq., (collectively, "CEQA"), an EIS/R was prepared for the Project to analyze the environmental effects of the Project. The SDEIS/R was circulated from February 7, 2007 to April 3, 2007 for public review and comment in accordance with CEQA. Responses to comments, together with other information, were prepared and are contained in the SFEIS/R. RT is the CEQA Lead Agency for the Project and the EIS/R was prepared under the direction and supervision of RT.

Procedural Background

The following is an overview of the environmental review process for the Project that has led to the preparation of the EIS/R.

1. In accordance with section 15082 of the CEQA Guidelines, RT prepared a Notice of Preparation ("NOP") of a Subsequent Environmental Impact Report and filed it with the Office of Planning and Research ("OPR") on March 14, 2002. The NOP was circulated to the public, local and state agencies, and other interested parties to solicit comments on the proposed Project. A Notice of Intent ("NOI") to prepare a Supplemental Environmental Impact Statement was also published in the Federal Register on March 8, 2002. Environmental issues and alternatives raised by comments received on the NOP/NOI during the public review period were considered for inclusion in the EIS/R. Copies of agency letters received in response to the NOP/NOI are provided in Appendix E of the SFEIS/R.
2. Copies of the SDEIS/R were available at the Regional Transit office and several Sacramento area public libraries and were circulated for public review. In addition, the SDEIS/R was made available on the RT website and a computer disc or hard copy was made available upon request.
3. The comment period for the SDEIS/R was from February 7, 2007 through April 3, 2007.
4. In response to the comments received concerning the SDEIS/R, the SFEIS/R was issued in September 2008. The SFEIS/R contains copies of all comments received on the SDEIS/R and responses to those comments. The SFEIS/R also

contains errata revisions to the SDEIS/R and supplemental information deemed necessary in response to comments in the SDEIS/R.

5. Copies of the SFEIS/R were sent to responsible agencies and notice was provided via a Notice of Availability sent to interested parties, including any person who commented on the SDEIS/R. In addition, the SFEIS/R was made available on the RT website.
6. Pursuant to Public Resources Code section 21092.5, the lead agency provided a written response in the form of the SFEIS/R to all public agencies commenting on the SDEIS/R, 10 days prior to certifying the SFEIS/R.
7. A detailed description of all consultation and coordination with federal, state, and local agencies, and with organizations, elected officials, community leaders, and other individuals from the neighborhoods and communities within Sacramento, Elk Grove, and the South Sacramento Corridor is included in the SFEIS/R at Chapter 8.

III. DESCRIPTION OF THE RECORD

For purposes of CEQA and these findings, the record before RT includes, without limitation, the following:

1. The Initial Study;
 2. The SDEIS/R and all appendices to the SDEIS/R;
 3. The SFEIS/R, the addendum/errata to the SFEIS/R and all appendices to the SFEIS/R;
 4. All notices required by CEQA, staff reports, and presentation materials related to the Project;
 5. All studies conducted for the Project and contained in, or referenced by, staff reports, the SDEIS/R, or the SFEIS/R;
 6. All public reports and documents related to the Project prepared for RT and other agencies;
 7. All documentary and oral evidence received and reviewed at public hearings and workshops and all transcripts (if available to the RT Board of Directors ("RT Board")) and minutes of those hearings related to the Project, the SDEIS/R and the SFEIS/R;
 8. For documentary and informational purposes, all locally-adopted land use plans and ordinances, including, without limitation, general plans, specific plans and
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ordinances, master plans together with environmental review documents, findings, mitigation monitoring programs and other documentation relevant to planned growth in the area; and

9. Any additional items not included above if otherwise required by law.

IV. DISCRETIONARY ACTIONS

The discretionary action for the proposed Project involves the following approvals by RT:

1. Certification of the SFEIS/R;
2. Adoption of the CEQA Findings of Fact;
3. Adoption of the Mitigation Monitoring Program;
4. Adoption of the Statement of Overriding Considerations;
5. Approval of the Project.

These findings are made by RT pursuant to Section 15091 of the CEQA Guidelines. RT is also adopting a "Statement of Overriding Considerations" pursuant to Section 15093 of the CEQA Guidelines.

V. GENERAL FINDINGS

Terminology of Findings

Section 15091 of the CEQA Guidelines requires that, for each significant environmental effect identified in an EIR for a proposed project, the approving agency must issue a written finding reaching one or more of three allowable conclusions. The first is that "[c]hanges or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR." The second potential finding is that "[s]uch changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency." The third permissible conclusion is that "[s]pecific economic, social, or other considerations make infeasible the mitigation measures or project alternatives identified in the final EIR."

For purposes of these findings, the term "mitigation measures" shall constitute the "changes or alterations" discussed above. The term "avoid or substantially lessen" will refer to the effectiveness of one or more of the mitigation measures or alternatives to reduce an otherwise significant environmental effect to a less-than-significant level. Although Section 15091, read literally, does not require findings to address

environmental effects that an EIR identifies as merely “potentially significant,” these findings will nevertheless fully account for all such effects identified in the SFEIS/R for the proposed Project. When an impact remains significant or potentially significant with mitigation, the findings will generally find that the impact is still “significant.”

In the process of adopting mitigation, RT will also be making decisions on whether each mitigation measure proposed in the SFEIS/R is feasible or infeasible. Pursuant to the CEQA Guidelines, “feasible means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.” (Guidelines, § 15364.) When RT finds a measure is not feasible, evidence for its decision will be provided.

Certification of SFEIS/R

In adopting these findings, in accordance with CEQA, RT has considered the environmental effects as shown in the SFEIS/R prior to approving the Project. These findings represent the independent judgment and analysis of RT.

Changes to the SDEIS/R

In the course of responding to comments received during the public review and comment period on the SDEIS/R, certain portions of the SDEIS/R have been modified and some new information has been added as reflected in the SFEIS/R. The changes made to the SDEIS/R do not result in the existence of:

1. A significant new environmental impact that would result from the Project or an adopted mitigation measure;
2. A substantial increase in the severity of an environmental impact that is not reduced to a level of less than significant by adopted mitigation measures;
3. A feasible project alternative or mitigation measure not adopted that is considerably different from others analyzed in the SDEIS/R that would clearly lessen the significant environmental impacts of the Project; or
4. Information that indicates that the public was deprived of a meaningful opportunity to review and comment on the SDEIS/R.

RT finds that the amplifications and clarifications made to the SDEIS/R do not collectively or individually constitute significant new information within the meaning of Public Resources Code section 21092.1 and CEQA Guidelines section 15088.5.

Evidentiary Basis for Findings

These findings are based upon substantial evidence in the entire record before RT as described in Section III.

The references to the SDEIS/R and to the SFEIS/R set forth in these findings are for ease of reference and are not intended to provide an exhaustive list of the evidence relied upon for these findings.

Findings Regarding Mitigation Measures

1. **Mitigations Adopted.** Except as otherwise noted, the Mitigation Measures herein referenced are those identified in the SFEIS/R.
2. **Effect of Mitigations.** Except as otherwise stated in these findings, in accordance with CEQA Guidelines sections 15091, 15092, and 15093, RT finds that the environmental effects of the Project:
 - Will not be significant; or
 - Will be mitigated to a less-than-significant level by the mitigation measures adopted by RT; or
 - Can and should be mitigated to a less-than-significant level by the mitigation measures within the jurisdiction of another public agency; or
 - Will remain significant after mitigation, but specific economic, legal, social, technological, or other considerations outweigh the unavoidable adverse environmental effects.

RT finds that the mitigation measures incorporated into and imposed upon the Project will not have new significant environmental impacts that were not already analyzed in the SDEIS/R.

Location and Custodian of Records

Pursuant to Public Resources Code section 21081.6 and California Code of Regulations, title 14, section 15091, RT is the custodian of the documents and other material that constitute the record of proceedings upon which RT's decision is based, and such documents and other material are located at Sacramento Regional Transit District, 1400 29th Street, Sacramento, CA 95812.

VI. FINDINGS REGARDING MONITORING/REPORTING OF CEQA MITIGATION MEASURES

As required in Section 21081.6 of the California Public Resources Code, RT adopts a monitoring and reporting program regarding changes in the Project or mitigation measures imposed to mitigate or avoid significant effects on the environment.

The Mitigation Monitoring and Reporting Plan ("the Plan"), in the form presented to RT

as Exhibit C to the SFEIS/R, is hereby adopted:

- A. The Conditions of Approval are specific and, as appropriate, define performance standards to measure compliance under the Plan.
- B. The Plan has been designed with detailed descriptions of conditions, implementation, verification, a compliance schedule and reporting requirements to ensure compliance with the Conditions of Approval.
- C. The Plan ensures that the mitigation measures are in place, as appropriate, throughout the life of the Project.

VII. FINDINGS REGARDING ALTERNATIVES

CEQA Guidelines section 15126.6 requires a discussion of a reasonable range of alternatives to the project or to the location of the project. However, an EIR need not consider an alternative whose implementation is remote or speculative. An EIR is required to describe and comparatively evaluate a range of reasonable alternatives to a project, or location of a project, that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. The alternatives analyzed are as follows:

- A. No-Action Alternative; and
- B. Transportation Systems Management ("TSM") Alternative.

Several other alternatives were identified but were subsequently withdrawn from consideration due to impacts to natural resources, utilities, and other area land uses. These withdrawn alternatives are noted in Chapter 2.8 of the SFEIS/R, and the reasons for withdrawal follow their descriptions.

Each of the alternatives was evaluated based on the Statement of Goals and Objectives as defined in the original South Sacramento Corridor environmental document. These are listed in the SFEIS/R at Subsection 7.7.1. RT identified five major goals to be used in the evaluation of alternatives and the Project, as distilled from the Statement of Goals and Objectives. The five major goals are as follows:

- Travel and Mobility Goal. The travel and mobility goal is to provide a transportation system that is safe, efficient, and coordinated, and that provides a balanced set of travel alternatives in the corridor.
- Land Use Goal. The land use goal is to ensure compatibility between land use policies and transportation policies so that the need for and amount of travel using automobiles is minimized.

- Financial and Economic Goal. The financial and economic goal is to provide a transportation system that makes the most efficient use of limited financial resources.
- Environmental Goal. The environmental goal is to provide a transportation system that enhances and preserves the physical and natural environment.
- Community Considerations Goal. The community considerations goal is to provide a transportation system that is consistent with the needs and desires of the residents of the corridor, and that thereby maximizes community acceptance and political support. (SFEIS/R Subsection 7.7.1.)

A. No-Action Alternative

CEQA Guidelines section 15126.6(e)(1) states that a No-Project Alternative shall be analyzed to allow decision makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project. The No-Action Alternative under federal law is equivalent to the No-Project Alternative under CEQA.

The No-Action Alternative consists of all currently planned and programmed (i.e., funded) projects, except for the proposed Project. Here, the No-Action Alternative consists of those projects identified in the financially-constrained long-range Metropolitan Transportation Plan for 2027 ("MTP"). (SFEIS/R Section 2.2.)

For the transit network, the No-Action Alternative includes improvements developed for the System Expansion and Phasing Strategy for RT's Multi-Corridor Study and adopted by RT in July 2001. These improvements would include: continued expansion of the intercity train service in the Bay Area; commuter rail service between Dixon and Auburn; expansion of the light rail to Antelope, Folsom, West Sacramento, and the Amtrak station in Downtown Sacramento; and a substantial increase in bus and van service. A complete list of improvements is found at page 2-5 of the SFEIS/R. (SFEIS/R Subsection 2.2.2 and Figure 2.2-1 and Table 2.2-1.)

The highway network includes major roadway projects that have already been completed, such as HOV lanes on SR 99 from Grant Line Road in Elk Grove to U.S. 50. Major South Corridor roadway improvements include HOV lanes and additional park-and-ride lots along I-5. (SFEIS/R Subsection 2.2.3 and Table 2.2-2.)

Rejection of the No-Action Alternative

The RT Board finds that the No-Action Alternative is infeasible because it fails to carry out the major goals, objectives, and purposes that have been developed by RT over the long planning process. (SFEIS/R Section S-1.) Following public review of the 1994 South Sacramento Corridor Alternatives Analysis/DEIS/DEIR, the RT Board of Directors selected the Locally Preferred Alternative, which identified light rail transit as the preferred mode of transportation for the corridor. (SFEIS/R Preface.) This 1994

document also defined goals and objectives for the entire South Sacramento Corridor. The No-Action Alternative does not meet those goals and objectives.

The South Sacramento Phase 2 Corridor is the fastest growing portion of Sacramento County. Elk Grove, at the south end of the corridor, is the fastest growing community in California and the Sacramento Region is the third fastest growing region in the state. Total households in the Phase 2 Corridor are projected to more than double from 82,400 in Year 2000 to 179,100 by 2030. Employment is projected to grow even faster, increasing from 36,800 in Year 2000 to over 104,800 by Year 2030. (SFEIS/R Subsection 1.2.2.)

The No-Action Alternative fails to provide a means of addressing the growth in this region. Without LPAP2, there will be no improved capacity or faster and convenient access to downtown Sacramento and other Corridor activity centers.

The No-Action Alternative would not yield increased transit use and decreased roadway congestion. Traffic congestion on SR 99, north of Sheldon Road, would not be decreased and downtown parking demand would also not be decreased. (SFEIS/R Table S-2.) Year 2030 auto travel times are projected to increase significantly compared to Year 2000 conditions under the No-Action Alternative. These increases range from 25 percent to 50 percent. Year 2030 transit travel times are also expected to be longer relative to Year 2000 conditions under the No-Action Alternative. (SFEIS/R Subsection 3.2.5.1.)

Direct energy consumption would be highest for the No-Action Alternative, because more auto/truck vehicle miles would be driven per year. (SFEIS/R Table 4.11-2.)

Regional air quality would continue to suffer under the No-Action Alternative. Regional criteria pollutant emissions (CO, ROG, NOx, SOx, and PM10) would not decrease as compared to LPAP2. (SFEIS/R Table S-2.)

The No-Action Alternative would support a long-term dispersed pattern of development in the South Sacramento Corridor. This would not be consistent with local and regional land use planning objectives that promote transit as the key to more orderly and sustainable growth. (SFEIS/R Subsection 4.10.4.)

Although the No-Action Alternative would have fewer environmental impacts in specific impact categories, the RT Board rejects this alternative. The RT Board finds that specific social, economic, and other considerations identified in the Statement of Overriding Considerations support approval of LPAP2. Adoption of LPAP2 is appropriate because it will implement federal, state, and local governmental objectives for managing transit and air quality concerns in light of projected population, job growth, and traffic congestion, despite any adverse environmental effects associated with LPAP2.

B. Transportation Systems Management (“TSM”) Alternative

The TSM Alternative is defined as the “best that can be done” to improve transit services in the South Sacramento Phase 2 Corridor (“Corridor”) without a major capital investment in new infrastructure. It consists of the future baseline highway network plus improvements to future transit service and facilities, but does not include the LPAP2 LRT extension and its associated feeder bus services. For the TSM Alternative, therefore, lower-cost line-haul and feeder bus routes are added to the No-Action Alternative. Additions include direct express bus service via SR 99 and I-5 HOV lanes; a new park-and-ride lot at Cosumnes River College (“CRC”); a high-frequency trunkline bus route connecting the Elk Grove/Lent Ranch area to CRC and the Meadowview LRT Station; an improved transit center at CRC; and transit priority treatment along Stockton Boulevard in the Corridor. Figure 2.3-1 in the SFEIS/R shows the transit network under the TSM Alternative.

The TSM Alternative rail transit operations consist of the existing Sacramento LRT system with other LRT and rail improvements identified in the 2027 MTP but without the LPAP2 LRT extension. The highway and roadway improvements would be the same as under the No-Action Alternative.

Rejection of the Transportation Systems Management (TSM) Alternative

The RT Board finds that the TSM Alternative is infeasible because it incorporates design parameters that fail to accomplish the goals of improved public transit services, regional connectivity, expansion of modal operations, alleviation of traffic congestion, and improved regional air quality. Following public review of the 1994 South Sacramento Corridor Alternatives Analysis/DEIS/DEIR, the RT Board of Directors selected the Locally Preferred Alternative, which identified light rail transit as the preferred mode of transportation for the Corridor. (SFEIS/R Preface.) This 1994 document also defined goals and objectives for the entire South Sacramento Corridor. Similar to the No-Action Alternative, the TSM Alternative does not meet the basic goals, objectives, and purposes for the Corridor. The TSM Alternative fails to promote a transit system that influences growth into efficient and coherent patterns to improve the region’s economy, land use, air quality, and quality of life.

Under the TSM Alternative, the number of linked transit trips would be lower than under LPAP2 and would require more transfers both to and from the South Corridor. (SFEIS/R Subsection 3.2.4.1.) The TSM Alternative is also projected to cause longer transit travel times than LPAP2 because of LPAP2’s potential for “one seat” no transfer transit trips via drive access. Table 3.2-14 provides a tabulation of Year 2030 average weekday hours of user benefit and shows a total of 2,222 hours of equivalent travel time savings. (SFEIS/R Subsections 3.2.5.2-3.)

Proposed transit improvements under the TSM Alternative would encourage shifts from auto to transit and are projected to result in some lessening in traffic on Corridor roadways. The projected shift, however, would not be sufficient to reduce roadway

congestion substantially. Table 3.3-8 in the SFEIS/R shows that traffic volumes and levels of service on both SR 99 and I-5 in 2030 would be almost identical to the No-Action Alternative. (SFEIS/R Subsection 3.3.5.1.)

Additionally, the costs to operate and maintain the TSM Alternative would be higher than LPAP2. Section 7.3 of the SFEIS/R shows that the system wide operation and maintenance costs for the TSM Alternative would be \$1.03 million higher than LPAP2 because the TSM Alternative uses substantially more bus service and bus operating costs are increasing at a faster rate than rail operating costs. Additionally, RT has achieved rail operating cost efficiencies and the trend is expected to continue. (SFEIS/R Section 7.3.)

Long term land use impacts of the TSM Alternative would likely support more dispersed patterns of development. Though the improved bus service of the TSM Alternative would better promote transit as the focus of orderly and sustainable growth than the No-Action Alternative, it would not reach the level offered by LPAP2, which focuses on ridership collection at station sites. (SFEIS/R Subsection 4.10.4.)

In summary, while providing some additional public transit options via buses, the TSM Alternative fails to fulfill the traffic, air quality, land use, economic, and social goals for the South Sacramento Phase 2 Corridor. For reasons stated throughout these findings, and particularly in the Statement of Overriding Considerations, RT finds that adoption of LPAP2 and not the TSM Alternative is appropriate and will implement federal, state, and local objectives for managing transit and air quality concerns in light of projected population, job growth, and traffic congestion, despite any adverse environmental effects associated with LPAP2.

VIII. GROWTH INDUCING IMPACTS

Section 6.3 of the SFEIS/R presents the growth-inducing impacts that can be anticipated from adoption and implementation of the Project. Section 15126(d) of the CEQA Guidelines requires that an EIR address the growth-inducing impacts of the proposed action. According to the CEQA Guidelines, an EIR should discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment, including projects which would remove obstacles to population growth.

A growth inducement evaluation was conducted for the Project, as discussed in Subsection 4.13.6 of the SFEIS/R. It was determined that the Project would not induce unplanned growth in the South Sacramento Corridor. (SFEIS/R Sections 4.13.6 and 6.3.) Rather, the Project responds to projected increases in travel demand triggered by existing general plan and zoning decisions. LPAP2 would provide transit facilities that would be supportive of planned growth by influencing development into efficient and coherent patterns. For example, transit oriented development is currently under review by RT and the City of Sacramento for the Morrison Creek Station, and development near the CRC station has been revised to be more transit related. (SFEIS/R

Subsection 6.3.)

IX. FINDINGS REGARDING ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The SFEIS/R identifies the thresholds of significance utilized to determine the impacts in various resource categories discussed below. The SFEIS/R also sets forth environmental effects that are less than significant before mitigation, potentially significant or significant in the absence of mitigation measures. These are identified below, as well as any mitigation measures adopted that will avoid or substantially lessen those potentially significant or significant effects. Also set forth are certain significant effects that cannot be avoided or reduced to a less-than-significant level even with the adoption of all feasible mitigation measures proposed in the SFEIS/R. In adopting these findings, RT also adopts a Statement of Overriding Considerations setting forth the economic, social, and other benefits of LPAP2 that will render these significant effects acceptable. RT is not required to adopt mitigation measures or policies as part of the Project for impacts that are less than significant. Chapter, Section, and Subsection designations refer to the SFEIS/R dated September 2008.

Chapter 3. Transportation.

1. **LPAP2 Freeway/Arterial Impacts:** LPAP2 would result in a measurable reduction of traffic on some roadways and marginal increases of traffic on others. [Beneficial Impact]

Mitigation Measure adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.) The impact is substantially beneficial.

2. **LPAP2 Intersection Impacts 2030:** 2030 impacts on the following City of Sacramento, County of Sacramento and City of Elk Grove intersections:
 - a. **Center Parkway and Cosumnes River Boulevard:** During the AM peak hour, the intersection operating condition deteriorates from LOS D to LOS E and the average delay increases from 48.0 seconds to 62.4 seconds. [Significant Impact] During the PM peak hour, the intersection operating condition deteriorates by more than 5 seconds of delay, and the average delay increases from 86.1 to 94.9 seconds. [Significant Impact]

Mitigation Measure adopted by RT: Add a second southbound left turn lane and provide overlap for all right turn phases. With this modification, the intersection would operate at LOS D, and the impact would be reduced to below the level of significance. This mitigation would require widening the bridge over Union House Creek (the cost of which is

included in the project costs).

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: The mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: LPAP2 would cause the intersection operating condition to deteriorate from LOS D to LOS E in the AM peak hour and a delay of more than 5 seconds in the PM peak hour. By adding a turn lane, providing for overlap and restriping the intersection as stated above, the mitigation measures would improve the operating condition at the intersection to LOS D in AM peak hour and LOS E in the PM peak hour. Under the No Action Alternative, the LOS would remain at LOS D in the AM peak hour and LOS F in the PM peak hour. Therefore, the mitigation measures are improving the conditions to the same or better than the No Action Alternative and the impact is reduced to a less than significant level, as shown in the SFEIS/R at Tables 3.3-15. . (SFEIS/R Chapter 3.) The mitigation measure is expressly incorporated in the Project approval.

- b. **Bruceville Road and Cosumnes River College:** During the AM peak hour the intersection operating condition deteriorates from LOS C to LOS D and the average delay increases from 21.5 to 35.7 seconds. [Significant Impact] During the PM peak hour, the intersection operating condition deteriorates from LOS C to LOS D and the average delay increases from 33.6 to 39.7 seconds. [Significant Impact]

Mitigation Measure adopted by RT: Add a second eastbound left turn lane and 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 AM and PM peak hours.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: The mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: The Project would cause the intersection operating condition to deteriorate by causing delay increases of more than five seconds in the AM and PM peak hours. By adding a left turn lane and a shared through-right lane, the LOS condition at the intersection would improve to LOS C, instead of LOS D. Under the No Action Alternative, the LOS condition would be LOS C. Therefore, the

mitigation measures would improve the LOS condition at the intersection to the same condition as the No Action Alternative, reducing the impact to a less than significant level, as shown in the SFEIS/R at Table 3.3-15. (SFEIS/R Chapter 3.) The mitigation measure is expressly incorporated in the Project approval.

- c. **Bruceville Road and Old Calvine Road:** During the PM peak operating hour the intersection operating condition deteriorates from LOS C to E and the average delay increases from 32.6 to 65.2 seconds. [Significant Impact]

Mitigation Measure adopted by RT: Provide overlap signal phasing on the right turn to improve LOS at the intersection to C in the PM peak hour.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: The mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: The Project would cause the intersection operating condition to deteriorate by causing delay increases of more than five seconds in the PM peak hours. Providing overlap signal phasing on the right turn would improve the LOS from E to C. The No Action Alternative results in an LOS condition of LOS C. Therefore, implementation of the mitigation measure would improve the operating condition of the intersection to the same level as the No Action Alternative, and the impact would be reduced to a less than significant level, as shown in the SFEIS/R at Table 3.3-15. (SFEIS/R Chapter 3.) The mitigation measure is expressly incorporated in the Project approval.

- d. **Franklin Boulevard and Cosumnes River Boulevard:** During the AM peak hour, the intersection operating condition deteriorates by more than 5 seconds of delay, and the average delay increases from 47.8 to 56.9 seconds. [Significant Impact] During the PM peak hour, the intersection operating condition deteriorates by more than 5 seconds of delay, and the average delay increases from 37.6 to 48.7 seconds. [Significant Impact]

Mitigation Measure adopted by RT: Provide overlap for all right turn phases. This would improve LOS to D in the AM and PM peak hours.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: The mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: The Project would cause the intersection operating condition to deteriorate from LOS D to LOS E in the AM peak hour and would cause a delay increase of more than 5 seconds in the PM peak hour. Providing overlap for all right turn phases would improve the LOS at the intersection to D in the AM and PM peak hours, and the AM and PM peak hour delay increase would be approximately 4 seconds, instead of 9 and 11 seconds, respectively. Because the delay increase would be less than 5 seconds if the mitigation measures are implemented, the impact would be reduced to a less than significant level as shown in the SFEIS/R at Table 3.3-15. (SFEIS/R Chapter 3.) The mitigation measure is expressly incorporated in the Project approval.

- e. **Auberry Drive and Calvin Road:** During the AM peak hour, the intersection operating condition deteriorates by more than 5 seconds of delay, and the average delay increases from 60.2 to 67.8 seconds. [Significant Impact]

Mitigation Measure adopted by RT: Provide protected phasing for the northbound and southbound approaches, which would improve LOS at the intersection to D in the AM peak hour.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: The mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: The Project would cause the intersection operating condition to deteriorate by causing delay increases of more than 5 seconds in the AM peak hour. By providing protected phasing for the northbound and southbound approaches, the intersection operating condition would improve to LOS D. Under the No Action Alternative, the LOS condition would remain at LOS E. Therefore, the mitigation measures would provide better operating conditions than under the No Action Alternative, reducing the impact to a less than significant level, as shown in Table 3.3-15 of the SFEIS/R. (SFEIS/R Chapter 3.) The mitigation measure is expressly incorporated in the Project approval.

- f. **Old Calvin Road and Cosumnes River College south access:** During the PM peak hour, the proposed intersection would operate at an overall LOS of D, which is below the City of Sacramento's goal of LOS C. [Significant Impact]

Mitigation Measure adopted by RT: Signalize the intersection. This would improve LOS at the intersection to C or better in the AM and PM

peak hour.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: The mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: The Project would cause the intersection operating condition to deteriorate by causing the intersection to operate at a level of LOS D. Signalizing the intersection would improve the LOS to B in the PM peak hours. Therefore, implementation of the mitigation measure would reduce the impact to a less than significant level. (SFEIS/R Chapter 3.) The mitigation measure is expressly incorporated in the Project approval.

3. **LPAP2 Traffic Delays at Grade Crossings.** For at-grade crossings, vehicular traffic on the cross streets would be delayed while crossing gates cross intersections. Moderate queues are projected at LRT crossing locations along Meadowview Road and Cosumnes River Boulevard. Intersection efficiency is reduced due to at-grade crossings at the Franklin Blvd. and Cosumnes River Blvd. intersection, as well as the Center Parkway and Cosumnes River Blvd. intersection. [Potentially Significant Impact]

Mitigation Measures Adopted by RT: For at-grade crossings adjacent to LPAP2 LRT stations, RT will implement crossing signal control measures to minimize the amount of time gates are down when trains must stop to load and unload passengers 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. Additionally, as discussed in Chapter 2 of the SFEIS/R, express trains not stopping at a near side station would have equipment to bypass the timed delay. Further, RT will implement “near side” crossing signal control measures at the intersections of Center Parkway and Cosumnes River Boulevard, Franklin Boulevard and Cosumnes River Boulevard, and Bruceville Road and Cosumnes River College to provide additional safety.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: Vehicular traffic on cross streets would be delayed when crossing protection equipment is activated and LRT trains occupy the crossing. Therefore, an intersection queuing analysis and an intersection efficiency analysis were completed to more thoroughly evaluate the

Project's traffic impacts. These analyses are shown in the SFEIS/R at Tables 3.3-12, -13, and -14. (SFEIS/R Chapter 3.) By implementing crossing control measures as stated above, the LRT crossings would be safer for pedestrians and the delay caused by LRT would be lessened. Therefore, implementation of the mitigation measures would reduce the impacts to a less than significant level. The mitigation measure is expressly incorporated in the Project approval.

4. **LPAP2 Intersection Impacts 2012:** 2012 impacts to intersections in the City of Sacramento, County of Sacramento, and Elk Grove include:

- a. **Center Parkway and CRB:** During the AM peak hour, the intersection operating condition deteriorates by more than 5 seconds of delay, from 50.0 to 61.7 seconds. [Significant Impact] During the PM peak hour, the intersection operating condition deteriorates by more than 5 seconds of delay, from 55.9 to 97.4 seconds. [Significant Impact]

Mitigation Measure adopted by RT: 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. With this modification, the intersection would operate at LOS D in the AM peak hour and E in the PM peak hour, and the impact would be reduced to below a level of significance. This mitigation would require widening the bridge over Union House Creek (the cost of which is included in the project costs). The second southbound left turn lane and the second eastbound through lane will be added along with the widening of Cosumnes River Boulevard between Center Parkway and Bruceville Road.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: The mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: The Project would cause the intersection operating condition to deteriorate from LOS D to LOS E in the AM peak hour and LOS E to LOS F in the PM peak hour. By adding a second turn lane, providing for overlap, and restriping the eastbound approach, the intersection operating condition would improve to LOS D in the AM peak hour and LOS E in the PM peak hour. The No Action Alternative would result in an operating condition of LOS D in the AM peak hour and LOS E in the PM peak hour. Implementation of the mitigation measures would improve the operating condition to approximately the same level as exists under the No Action Alternative. Therefore, implementation of the mitigation measures would reduce the impact to a less than significant level, as shown in the SFEIS/R at Table 3.4-3.

(SFEIS/R Chapter 3.) The mitigation measure is expressly incorporated in the Project approval.

- b. **Franklin Boulevard and Cosumnes River Boulevard:** During the AM peak hour, the intersection operating condition deteriorates by more than 5 seconds of delay, from 65.2 to 86.0 seconds. [Significant Impact] During the PM peak hour, the intersection operating condition deteriorates by more than 5 seconds of delay, from 44.2 to 64.8 seconds. [Significant Impact]

Mitigation Measure adopted by RT: By 2012, no feasible mitigation measures can be implemented.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that there are no feasible mitigation measures available to reduce this impact to a less than significant level, therefore, it remains **significant and unavoidable**. RT finds that there are no other feasible mitigation measures which it could adopt at this time that would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, RT finds that specific economic, social, or other considerations identified in the Statement of Overriding Considerations support the approval of the proposed Project.

Facts and Reasoning to Support Finding: Mitigation of the 2012 impacts to this intersection are not feasible due to the physical constraints of the location. Although LOS will improve overtime due to the other mitigation measures listed for the 2030 impacts and other roadway and intersection infrastructure planned for the future, immediate improvements to the intersection are not feasible or practicable by 2012, resulting in an unavoidable adverse impact. (SFEIS/R Chapter 3.)

- c. **Bruceville Road and Sheldon Road:** During the PM peak hour, the intersection operating condition deteriorates by more than 5 seconds of delay, from 36.5 to 42.3 seconds.

Mitigation Measure adopted by RT: Provide overlap for all right turn phases, which would improve LOS at the intersection to C in the PM peak hour.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: The mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: The Project would cause the intersection operating condition to deteriorate by increasing delay times by more than five seconds in the PM peak hour, resulting in an operating condition of LOS D. Providing overlap for all right turn phases would improve the LOS at the intersection to C in the PM peak hour. Under the No Action Alternative, the operating condition would remain at LOS D. Therefore, implementation of the mitigation measure would improve the condition of the intersection to a better condition than under the No Action Alternative, and the impact would be reduced to a less than significant level, as shown in SFEIS/R at Table 3.4-3. (SFEIS/R Chapter 3.) The mitigation measure is expressly incorporated in the Project approval.

- d. **Bruceville Road and Cosumnes River Boulevard:** During the AM peak hour, the intersection operating condition deteriorates by more than five seconds of delay, and the average delay increases from 50.3 to 100.0 seconds. [Significant Impact]

Mitigation Measure adopted by RT: Provide overlap for all right turn phases, which would improve LOS at the intersection to C in the AM peak hour.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: The mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: The Project would cause the intersection operating condition to deteriorate by increasing delay times by more than five seconds during the AM peak hour. Providing overlap for all right turn phases would improve the intersection operating condition to LOS C in the AM peak hour. The No Action Alternative would result in an operating condition of LOS D in the AM peak hour. Therefore, implementation of the mitigation measure would improve the operating condition of the intersection to a better condition than under the No Action Alternative, and the impact would be reduced to a less than significant level, as shown in SFEIS/R at Table 3.4-3. (SFEIS/R Chapter 3.) The mitigation measure is expressly incorporated in the Project approval.

5. **LPAP2 Circulation Impacts at Stations:** Local circulation would be affected by increased auto traffic on station impact roadways. [Potentially Significant Impact]

Mitigation Measures Adopted by RT: Implement mitigation measures above for LPAP2 Intersection Impacts and LPAP2 Traffic Delays at Grade Crossings. (Numbers 2, 3 and 4 above).

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: The mitigation measures are expressly incorporated into the Project approval, are feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: The vehicle circulation impacts in station areas were included in the traffic analysis in Section 3.3.6 of the SFEIS/R. Increased auto traffic would degrade local circulation on station impact roadways. The mitigation measures specified above relating to intersection impacts and traffic delays at grade crossings would also improve circulation by improving traffic flow and providing more turn lanes and overlap lanes where necessary. In all cases vehicular and pedestrian access to surrounding land uses would be maintained. (SFEIS/R Chapter 3.) Therefore, implementation of the mitigation measures would reduce the impacts to a less than significant level. The mitigation measures are expressly incorporated in the Project approval.

6. **LPAP2 Parking Impacts:** RT patrons may use on-street parking at the Center Parkway Station and adversely affect neighborhood parking, but all other stations would include park-and-ride lots with adequate spaces to match demands. LPAP2 would reduce the growth in overall parking demand in downtown Sacramento by about 1,300 parking spaces compared to the No-Action Alternative. [Potentially Significant Impact]

Mitigation Measures Adopted by RT: On-street parking along and in the vicinity of Center Parkway will be monitored to determine whether an adverse impact develops. If it does, an on-street parking permit program would be proposed.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level. The final implementation of this mitigation measure is within the responsibility and jurisdiction of the City of Sacramento, and not RT. Such mitigation measure has been adopted by the City of Sacramento or can and should be adopted by the City of Sacramento.

Facts and Reasoning to Support Finding: Because transit improvements under LPAP2 would include park-and-ride lots with adequate spaces to match demand, and because these alternatives would reduce parking demand in Downtown Sacramento, there is expected to be a beneficial impact overall on parking supply. However, on-street parking at the Center Parkway Station could lead to parking impacts in nearby residential neighborhoods. Under the

mitigation measures listed, if monitoring by the City of Sacramento indicates commuter parking exceeds acceptable levels at the Center Parkway Station, the City of Sacramento should create and implement a residential permit parking program. The plan should provide preferential parking by imposing parking time limits in neighborhoods and providing residents with a permit that would exempt them from the time limits. (SFEIS/R Chapter 3.) This would ensure that any potential parking problems in nearby residential neighborhoods would be alleviated. Therefore, implementation of the mitigation measures by the City of Sacramento would reduce impacts to a less than significant level.

Chapter 4. Affected Environment, Environmental Consequences, and Mitigation.

7. **Section 4.1. Aesthetic Impacts.** The following aesthetic impacts will result from the implementation of LPAP2:

LPAP2 LRT Alignment. Residents would have limited views of the corridor including the tops of catenary poles and overhead wires. Proposed noise barriers and existing privacy walls would provide visual screening and block views from the LRT vehicles of residences and yards. Visual changes with proposed sound walls include added bulk on the elevated structures and increased shading of residential properties. [Less Than Significant Impact]

Meadowview Road crossing. Visual changes would vary depending on the design option selected. For the flyover option, fences and landscaping would generally block views of the structure. The depressed option would eliminate long range views for motorists for a limited distance along Meadowview Road, while views from residences would be limited to the tops of catenary facilities. For the at-grade crossing option, views from residences would be limited to the tops of catenary poles and wires. [Less Than Significant Impact]

UPRR/Union House Creek Bridge. Views from homes would be partially obscured by backyard fences and landscaping, but some second story windows may have views of LPAP2 LRT facilities. The planned Cosumnes River Boulevard extension (by others) would also cross over the UPRR corridor on a separation structure just to the south of the LRT/UPRR separation structure. [Less Than Significant Impact]

Morrison Creek LRT Station. Some residences would have long-range views of the LRT station, park-and-ride lot, and rail alignment. These changes would not substantially degrade a scenic vista or be out of character with existing and planned land uses, including the proposed future extensions of Cosumnes River and Detroit Boulevards. These and other planned future land uses would also result in visual changes. [Less Than Significant Impact]

Franklin Blvd. LRT Station. Except for residences with visual screening, views of the station and park-and-ride lot (with lighting in foreground) would replace

views of vacant land. This would not substantially degrade scenic views or introduce obtrusive visual elements substantially out of character with existing and proposed land uses. [Less Than Significant Impact]

Franklin Boulevard crossing options. The flyover option structure would be viewed by Franklin and Cosumnes River Boulevard motorists, and some residential areas to the north, but visual changes are not substantially inconsistent with the existing intersection and the proposed future Cosumnes River Boulevard extension. The at-grade crossing option LPAP2 LRT facilities would result in visual changes, but would not detract from the existing visual character of the intersection. [Less Than Significant Impact]

Center Parkway Station and pedestrian overcrossing. Facilities would be visually consistent with the widened Cosumnes River Boulevard. Views from residences would be blocked by existing walls. The pedestrian overcrossing would be visible to Cosumnes River Boulevard motorists, but would not be substantially out of character with the roadway nor obscure scenic views. The pedestrian overcrossing and lighting facilities would be visible from some backyards or second-story windows. [Less Than Significant Impact]

Bruceville Road flyover options. Although visually apparent to motorists on Cosumnes River Boulevard and Bruceville Road, the flyover structure would not be inconsistent with the existing roadway intersection, traffic signals and utility poles. The flyover option would be more visible from the residential area north of Cosumnes River Boulevard. Existing privacy walls partially block views of this intersection. The design will seek to accentuate the architectural character of the college gateway. [Less Than Significant Impact]

Cosumnes River College Station. Long-range views of and from the CRS entrance would be interrupted by features of the new station, including the 2,000 space parking structure, platforms, shelters, signs, and light poles. Station features and catenary poles would interrupt long-range views of vacant land from the college entrance and parking areas, but would be consistent with the existing and proposed land uses. No scenic views would be obscured. At night the immediate area would be lighter due to 24-hour security lighting. [Less Than Significant Impact]

Optional Shuttle Lot at Calvine/Auberry. Most residential properties are walled-off from the existing roadway and are located a considerable distance away. Visual elements of the optional shuttle lot would include bus shelters and lighting associated with the new facility. At night the immediate area would be lighter due to 24-hour security lighting. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: Although CEQA does not require mitigation for this impact because it is less than significant as originally proposed, the Project incorporates strategies to achieve a project with greater

land use compatibility with adjacent land uses. RT will invite public participation regarding station and noise wall design during the final design phase of the Project. RT will also incorporate landscaping into the final design to soften views of LPAP2 LRT stations, park-and-ride lots, substations, and the optional shuttle lot. Finally, 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.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

8. **Section 4.2. Agricultural Impacts.** LPAP2 would require approximately 5.6 acres of farmland (in addition to 19.1 acres of Sacramento Regional County Sanitation District ("SRCSD") Bufferlands used for cattle grazing). Approximately 3.6 acres of farmland would be required for LPAP2 LRT alignment, 2.0 acres for the Morrison Creek Station and park-and-ride lot, and 12.7 acres if the Cosumnes River College park-and-ride lot (east of Bruceville) is constructed. These areas of farmland are not under a Williamson Act contract. [Less Than Significant Impact]

Mitigation Measure adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

9. **Section 4.3. Air Quality Impacts.** Regional criteria pollutant emissions would decrease by 88.1 ppd for CO, 4.9 ppd for ROG, 16.5 ppd for NOX, .4 ppd for SOX, 1.9 ppd for PM2.5, and 2.1 ppd for PM10, when compared to the No-Action Alternative. [Beneficial Impact] Small localized increases in CO would result, but are not anticipated to exceed the State one- and eight-hour standards, and no impacts to sensitive receptors are expected. [Less Than Significant Impact] The park-and-ride lot CO hot spot analysis indicated that automobile use at park-and-ride lots would not produce emissions that would exceed State or federal CO standards. [Less Than Significant Impact] The PM10 hot spot analysis indicated that emissions from the idling of buses at stations would not exceed State or federal PM10 standards. [Less Than Significant Impact]

Mitigation Measure adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

10. **Section 4.3.3.5. Global Warming:** LPAP2 would result in a reduction of approximately 4,168,000 vehicle miles traveled per year by 2030 over No-Action conditions. The removal of these vehicle miles from the roadway system would directly reduce regional GHG emissions. For example, the Project would reduce carbon dioxide emissions by approximately 772.6 tons per year. [Beneficial Impact]

Mitigation Measure adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

11. **Section 4.4. Biological Resources Impacts.** LPAP2 will result in the loss of 0.311 acres of jurisdictional wetlands [Potentially Significant Impact] and up to 0.14 acres of seasonal wetlands that provide suitable habitat for vernal pool fairy shrimp, mid-valley fairy shrimp, vernal pool tadpole shrimp, and California linderiella. [Significant Impact] The Project may also indirectly affect approximately 0.99 acres of seasonal wetlands and a vernal pool. [Significant Impact] The implementation of the Project will also result in the loss of up to 0.001 acres of aquatic habitat suitable for western pond turtle and giant garter snake, along with the potential loss of up to .46 acres of upland habitat for the giant garter snake. [Significant Impact] Additionally, the Project may result in the temporary and permanent disturbance of 33.22 acres of ruderal/disturbed vegetation and between 0.34 to 66.85 acres of potential nesting and foraging habitat for 13 special-status birds. [Potentially Significant Impact] Further, the Project may result in the possible loss of Valley oaks (*Quercus lobata*), interior live oak (*Quercus wislizenii*), and blue oak (*Quercus douglasii*) from SRCSD Bufferlands. These trees were planted in 1995 as part of the Trail of Trees effort. [Potentially Significant Impact]

Mitigation Measures Adopted by RT: RT will implement the following mitigation measures:

- Compensate for impacts to vernal pool crustacean habitat through purchase of the equivalent of 2.26 acres of preservation credits, and 0.14 acres of creation/restoration credits from a U.S. Fish and Wildlife Service ("USFWS") approved conservation bank, or combination of banks.
- Transplant directly affected elderberry shrubs and purchase the appropriate number of beetle habitat credits at a USFWS-approved conservation bank.
- Purchase equivalent of 9.823 acres of giant garter snake habitat credits from a USFWS-approved conservation bank.

- Consult with SRCSD Bufferlands manager to explore opportunities to compensate for impacts to nesting and foraging habitat for special-status bird species.
- 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 California Department of Fish and Game ("DFG") approved mitigation bank.
- Provide a qualified arborist to survey potentially affected trees. To the 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.
- Obtain necessary permits pertaining to affected waters of the U.S. The permitting process would also require compensation for project-related impacts.
- Purchase mitigation credits in an agency-approved wetland mitigation bank or an in lieu fee.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measures are expressly incorporated into the Project approval, are feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: Project effects on vegetation communities are shown in Table 4.4-5 of the SFEIS/R. As shown in Table 4.4-7 of the SFEIS/R, LPAP2 would affect special-status species habitat. Impacts to jurisdictional wetland and other waters of the U.S. are presented in Table 4.4-8 of the SFEIS/R. The mitigation measures, which require consultation with all applicable regulatory agencies as well as obtaining permits, would ensure protection of vegetation, special-status species habitat, and jurisdictional wetlands and waters. This would mitigate the impacts from Project implementation to a less than significant level. (SFEIS/R Chapter 4.) The mitigation measure is expressly incorporated in the Project approval.

12. **Section 4.5. Historic and Cultural Resources Impacts.** Pavement and other obstructions made it impossible to conclude with absolute certainty that no unrecorded cultural remains exist in:

- Areas of San Joaquin silt-loam soils that could not be surveyed because of pavement or other obstructions, including Cosumnes River Boulevard between Center Parkway and Bruceville Road and the optional shuttle lot location at Calvine/Auberry;

- Densely-vegetated natural stream crossings and streamside terraces (areas of higher archaeological sensitivity) along Morrison, Union House, and Strawberry creeks;
- The anomalies within the densely-vegetated Bufferlands identified by Tremaine and Associates. [Potentially Significant Impact]

Mitigation Measures Adopted by RT: 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. 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. The Project’s construction contracts will include provisions requiring this type of monitoring and coordination process.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: In the draft report prepared in 2002 for the CRB Extension Project, Tremaine and Associates note that the Bufferlands area would have been conducive to human habitation in prehistoric (as well as historic) times, given the proximity to natural water sources. Further, alluvial sediment deposition, which has occurred there over the last 10,000 years, has the potential to bury archaeological sites and features well below the modern ground surface. As an exploratory measure, Tremaine and Associates conducted an archaeo-technical (remote sensing) study, which consisted of a non-invasive, electromagnetic survey of a triangular piece of land immediately north of the proposed CRB extension, bounded by Union House Creek, Franklin Boulevard, and the UPRR tracks. The technique recorded three distinct electromagnetic “anomalies” (a fourth one was discounted because of its location within an existing detention basin), which Tremaine and Associates interpreted as “the most likely locations for buried archaeological deposits.” The researchers recommended that sample cores be taken and analyzed in these areas before construction for the CRB project – or, that at a minimum, monitoring be conducted at these three locations during construction. (SFEIS/R Chapter 4.) Pursuant to the researchers recommendation, the mitigation measures require that the identified locations be monitored, and RT would consult with OHP upon the uncovering of any artifacts. These mitigation measures are consistent with California’s State Historic Preservation Officer’s concurrence on a finding of no

affect being predicated on the FTA conducting monitoring, by an archeologist who meets the Secretary of Interior's standards for archeology, and a member of the local Native American community (if they so choose). Monitoring would ensure that any existing unknown artifacts would be identified and properly protected before construction could continue. Therefore, implementation of the mitigation measure will reduce impacts to a less than significant level. The mitigation measure is expressly incorporated in the Project approval.

13. **Subsection 4.6.1.2. Electrical and Magnetic Field ("EMF") Impacts.** LPAP2 would introduce new electrical systems into the local environment, and these are potential sources of increased EMF exposure to both individuals riding the rail system and individuals working (or possibly residing) near electrical equipment. At present, however, the evidence is that any increased health risks from EMF exposures attributable to light rail improvements would be very small and below the level of significance. [Less Than Significant Impact]

Mitigation Measure adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

14. **Subsection 4.6.2. Electrical and Magnetic Interference ("EMI") Impacts.** LPAP2 would generate electromagnetic fields ("EMF"), which could interfere with the effective performance of electronics and electrical equipment. [Potentially Significant Impact]

Mitigation Measure adopted by RT: EMI effects would be minimized as part of Project design. This may be done by ensuring that all electronic equipment is operated with a good electrical ground and that proper shielding is provided for electronic system cords, cables, and peripherals. Specialized components, such as filters, capacitors and inductors, can also reduce EMI susceptibility of certain systems. The design of the system will consider and incorporate, where practicable, the latest standards relevant to (minimizing) EMI.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: LPAP2 would generate EMF. EMF could potentially affect the performance of electronic and electrical equipment. By installing the proper shielding in the electronic system cords, cables, and peripherals, EMI effects would be minimized and the impacts would be reduced to a less than significant level. (SFEIS/R Chapter 4.) The mitigation measure is

expressly incorporated in the Project approval.

15. **Section 4.7. Geology, Soils, and Seismicity Impacts.** The risk of an actual 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 (most likely those associated with basin deposits) may be susceptible to seismically induced liquefaction and settlement, which could affect design and service of the alternatives. However, the results of the preliminary geologic hazards evaluation of the proposed project alternatives indicate that there are no substantial geologic hazard impacts that would not be fully addressed by standard design requirements and construction practices, and therefore, no mitigation measures are required. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

16. **Section 4.8. Hazardous Waste Impacts.** Impacts from Project implementation fall into two categories:

- **Potential to encounter buried hazardous waste:** Construction activities may be affected by releases of hazardous materials from known or previously unidentified hazardous waste sites. Also, contaminated groundwater may be encountered and affect underground structures associated with the LPAP2 LRT corridor or maintenance yards – such as foundations, vaults or manholes. Dewatering during trenching or excavating may change or amplify local hydraulic gradients and draw groundwater contamination into the trench or excavation. [Potentially Significant Impact]
- **Hazardous materials exposure during Project operations:** Construction activities such as clearing and grubbing and excavation may expose or encounter hazardous materials. 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 transported on freight trains would not increase or decrease as a result of LPAP2 and would remain the responsibility of the UPRR. Purchase agreements for property acquired along the alignment will address the characterization, remediation, and liability for existing hazardous environmental conditions. [Less Than Significant Impact]

Mitigation Measures Adopted by RT:

- 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.
- The three residential buildings subject to demolition (see section 4.13.3 of the SFEIS/R) will be inspected (and tested as necessary) for asbestos containing materials and lead-based paints.
- Contractors will incorporate procedures into a Construction Management Plan describing how they will monitor for subsurface contamination. Monitoring will include, at a minimum, visual observation for discolored, stained, or oily soils or for soils with unusual or foul odors by personnel with appropriate hazardous materials training, including 40 hours of Occupational Safety and Health Administration (OSHA)-approved Health and Safety training. In areas with documented groundwater contamination by petroleum products or other volatile, ionizable contaminants, surveillance will include monitoring with a gas analyzer equipped with a photoionization detector. If contamination is suspected, then soil samples should be collected and analyzed for contamination by a laboratory, certified by Cal-EPA's Environmental Laboratory Accreditation Program, using USEPA-approved analytical methods.
- A contingency plan for handling and disposing of contaminated soil and groundwater during construction will be prepared.
- 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. Regulatory agency files will be reviewed to confirm whether groundwater has been affected by any reported releases and/or whether the sites are within an area where excavation would encounter groundwater. Visual inspections will be conducted of properties or portions of properties that were inaccessible during preparation of this environmental document.
- Phase Two site investigations will be performed, as appropriate, prior to construction in areas where groundwater contamination is documented within the Project footprint; where groundwater or soil contamination is nearby (contaminants may migrate through the soil vadose zone into the construction area); or where current information regarding the extent of contamination is inconclusive. The purpose of the Phase Two investigation is to determine whether environmental contamination is present that could affect construction or future rail line maintenance. Sampling will include potential environmental contaminants, based on the results of the Phase I study, in soil and groundwater. Site operators/owners will be interviewed to develop a history of possible hazardous materials use at the site. The information collected will be used to develop safe and environmentally sound practices and procedures for the Project's Construction Management Plan.

- All contaminated materials encountered will be evaluated in the context of applicable local, state, and federal regulations and/or guidelines governing hazardous waste.
- All materials deemed to be hazardous will be remediated and/or disposed of following applicable regulatory agency regulations and/or guidelines. All evaluations, remediation, treatment and/or disposal of hazardous waste should be supervised and documented by qualified hazardous waste personnel.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measures are expressly incorporated into the Project approval, are feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: It is possible that soils in the median and on the shoulders of busy streets and highways within the Project area are contaminated by lead from automobile emissions or depositions of lead-based paint. In response to comments from the public regarding possible lead levels along CRB, soil samples were collected for a lead analysis on April 15, 2005 from six locations along CRB between Bruceville Road and Franklin Boulevard. Lead concentrations in the soil ranged from 5 to 14 milligrams per kilogram (mg/Kg or parts per million [ppm]). These values represent natural ambient concentrations with only minimal impact (if any) from the aerially deposited lead associated with historic vehicle emissions or other potential sources. Soil that contains lead at the concentrations reported herein does not require special handling during construction, and therefore, the impact is less than significant prior to mitigation.

Construction activities may be affected by releases of hazardous materials from hazardous waste sites. Construction activities such as clearing, grubbing, and excavation would require soil excavation and possibly dewatering, which may expose or encounter hazardous materials. Construction of LPAP2 could also encounter groundwater carrying contaminants from release sites (such as leaking underground storage tanks) to areas within the LPAP2 footprint and affect underground structures associated with LRT construction – such as foundations, vaults or manholes. Dewatering during trenching or excavating may change or amplify local hydraulic gradients and draw groundwater contamination into the trench or excavation. By conducting investigations and monitoring the construction sites per the instructions in the Construction Management Plan, any potential contamination or release of hazardous substances would be contained and dealt with in order to prevent contamination. The mitigation measures also require Phase II evaluations of certain sites and the documentation of any potential water contamination sites prior to beginning construction. These measures would ensure that those sites with the highest probability of contamination would be examined more thoroughly and any problems would be

identified before construction begins. By implementing these measures, the impacts would be reduced to a less than significant level.

LPAP2 would introduce new tracks and passenger LRT service into a segment of the existing UPRR corridor, within which existing freight rail service transports a variety of goods and materials. UPRR freight trains carry a wide variety of hazardous materials, over fifty, in various quantities. The specific materials and their quantities being moved in this UPRR corridor are subject to wide variations during any given time period dependent on UPRR business demands. The Federal Department of Transportation prescribes the standards for the safe transportation of hazardous materials. Based on these standards, UPRR has developed its own specific instructions regarding hazardous materials. Issues associated with any hazardous materials transported on freight trains would not increase or decrease as a result of LPAP2 and would remain the responsibility of the UPRR. Therefore, these impacts would be less than significant without mitigation.

LPAP2 impacts discussed in Section 4.16 of the SFEIS/R, Safety and Security, discusses the potential risk of derailments or collisions that can be anticipated with shared freight and light rail transit use of a common rail corridor. The predictable frequency of such accidents is already very small and would increase only nominally under shared corridor operations. A derailment or collision does not guarantee exposure to hazardous materials as freight rail cars are robust in their construction so as to minimize potential failure during derailments and collisions. (SFEIS/R Chapter 4.) This impact would be less than significant without mitigation.

The mitigation measures are expressly incorporated in the Project approval.

17. **Section 4.9. Hydrology/Floodplain/Water Quality Impacts.** No long term groundwater impacts are anticipated. From Morrison Creek to Union House Creek, and from Franklin Boulevard to Center Parkway, a planned (2005) flood control project (by others) will eliminate 100-year flood hazards. From Union House Creek to Franklin Boulevard, the LPAP2 LRT line would be constructed on a fill embankment above the 100-year flood elevation. Culverts through the embankment would convey runoff/flood flows. The Franklin park-and-ride lot would be constructed above the 100-year floodplain. The south berm of a large detention basin at the Franklin Station would be modified. Flood storage reduction would be avoided. On a regional basis, considering the urban area, the existing highway and local street network, and other paved surfaces such as structures and parking lots, runoff from LPAP2 would be negligible. [No Impact or Less Than Significant Impact]

Mitigation Measure adopted by RT: Although CEQA does not require mitigation for this impact because it is less than significant prior to mitigation, RT will ensure that parking lot pavements, catch basins, and storm drains will be

cleaned regularly and solid waste will be collected from facilities on a regular basis. Additionally, for any fill in the 100-year floodplain, RT will either (1) excavate compensating floodplain storage equal to the amount removed, or (2) pay a mitigation fee to Sacramento Area Flood Control Agency ("SAFCA"). Further, RT will develop a final floodplain mitigation plan in consultation with ACOE and SAFCA, and 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.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

18. **Section 4.10. Land Use and Planning Impacts.** The Project is consistent with the land use and development objectives of local development plans and policies to promote a transit system that influences growth into efficient and coherent patterns to improve the region's economy, land use, air, and quality of life. LPAP2 is included in the California State Transportation Improvement Program, SACOG's Metropolitan Transportation Plan, Sacramento County General Plan, City of Sacramento General Plan, Airport-Meadowview Community Plan, and the South Sacramento Community Plan, all of which promote preservation of rights-of-way for future LRT use and land use policy decisions that support the extension of the light rail system. Supportive land use planning would encourage compact development around station locations and promote maximum compatibility and coordination with the light rail system and area land uses. An estimated 54.4 acres would be required for construction of the LPAP2 alignment, stations, and park-and-ride lots. Approximately 14.6 acres of CRC property and 19.1 acres of SRCSD bufferlands would be converted to public rights-of-way. An additional 8.9 acres would come from the UPPR. [Beneficial Impact or Less Than Significant Impact]

Mitigation Measure adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

19. **Section 4.11. Minerals and Energy Impacts.**

- Minerals - No precious or scarce minerals would be mined or consumed in significant quantities to support the construction and operation of the alternatives under consideration. [Less Than Significant Impact]
 - Energy Impacts - Although transit vehicle miles of travel (VMT) would increase with LPAP2, the increase is 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 lowest for LPAP2. Direct energy consumption would be highest for the No-Action Alternative. When total system energy is considered, LPAP2 shows lower energy consumption than the No-Action Alternative. [Beneficial Impact]

Mitigation Measure adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

20. **Section 4.12. Noise and Vibration Impacts.** Noise impacts along the LPAP2 LRT alignment would vary depending on the design options selected. To comply with the RT policy that impact occurs when predicted noise levels are within 1 decibel of the FTA threshold for Moderate Impact, the predicted noise levels include a 1 decibel increase. The number of noise impacts along the LPAP2 LRT alignment would total approximately 308, 259 of which are Severe Impacts. Vibration impacts along the LPAP2 LRT alignment would be the same for all design options selected, with 23 homes being affected. [Significant Impact]

Mitigation Measures Adopted by RT:

- **Noise Barriers.** The primary mitigation measure would be the construction of sound barrier walls to shield areas where impacts are projected. The primary requirements for an effective noise barrier are that: (1) the barrier must be high enough and long enough to break the line-of-sight between the sound source and the receiver, (2) the barrier must be of an impervious material with a minimum surface density of 4 lb/sq. ft. and (3) the barrier must not have any gaps or holes between the panels or at the bottom. With these barriers, the predicted noise levels would be below the applicable Federal Transportation Authority (“FTA”) impact threshold at all sensitive receptors in the LPAP2 LRT corridor. The barriers range from 4 ft high on some elevated structures to 12 ft high east of the LRT tracks in the section between Meadowview and the Morrison Creek crossing. The barrier east of the tracks between Meadowview and Morrison Creek is higher than normal because it must be located at the UPRR right-of-way, which is up to 80 ft from the tracks. Because this barrier is so far from the LRT tracks, it must be higher to be effective. As noted in Table 4.12-10, the 12 ft high barrier between Meadowview and Morrison Creek is measured from the existing grade. The heights for the other barriers should be measured from the top of the rail.

Existing walls that are in good condition, such as the walls along the south side of CRB, have been incorporated into the LRT noise predictions. Walls that are in relatively poor condition, such as many sections of the walls east of the UPRR right-of-way between Meadowview and the

proposed UPRR flyover, have not been included in the noise prediction models. The condition of all existing walls will be examined by RT staff and consultants during the preliminary engineering and final design of LPAP2 to determine whether the walls can be considered effective for noise mitigation. The cost of new walls is included in the base cost estimate. As was done for Phase 1 of the South Sacramento Corridor, the community would be involved with the design of these noise walls.

- Sound Insulation. Sound insulation is a viable alternative to noise barriers in areas where they are impractical or where they would be excessively expensive considering the number of residences that would be protected. The locations where sound insulation could be considered as an alternative to noise barriers are:
 1. Meadowview Road At-Grade Option: There are several residences in the southwest quadrant of the Meadowview Road crossing where SW2, the sound wall west of the tracks would need to continue approximately 150 ft west on Meadowview to protect four residences on Jola Circle. An alternative is to improve the sound insulation of these four residences.
 2. N. Laguna Drive south of CRB: There is an existing 9 ft. wall along the south side of CRB in this area that would keep LRT noise at the ground floor level below the FTA impact threshold. However, there are approximately 13 two-story residences with windows that are higher than the wall. An alternative to the first 2000 ft of SW6 is to improve the sound insulation of all second-story windows that are higher than the existing wall and open into bedrooms or other noise-sensitive spaces.
- Coordinating Mitigation with Related Projects. The City of Sacramento proposes to widen CRB from two to four lanes between Bruceville Road and Franklin Boulevard and to extend CRB from its current westerly terminus at Franklin Boulevard to connect with I-5. These projects would provide new or increased roadway capacity that would require sound walls to meet DOT criteria whether or not LPAP2 is implemented. The timing of the widening plan is still uncertain, so this document reviews the impacts and mitigation for LPAP2 without widening as well as the cumulative impacts of the two projects. In its comment letter regarding the SFDEIS/SFDEIR, the City notes that it cannot determine the appropriate noise mitigation for the CRB widening until an EIR is complete for that project. For the LPAP2, RT is mitigating the LRT portion of the cumulative noise impacts along Cosumnes River Boulevard (as currently identified) and will await the City's environmental review to determine if different noise mitigation should be pursued along this roadway. Mitigation measures included in the LPAP2 project would mitigate the impacts of the

light rail to below FTA and RT's more stringent criteria levels. Should the CRB project move forward into the environmental assessment and preliminary design stages before LPAP2 is finalized, it may be feasible to coordinate the noise mitigation measures.

- Additional Noise Mitigation Techniques. Other potential noise mitigation measures include minimizing the wheel impacts at crossovers and various approaches to reducing the incidence of wheel squeal. The only areas in the conceptual plan where wheel squeal is a potential problem are the UPRR flyover, the Franklin Station, and the CRB flyover. These problems can almost always be resolved through some combination of adjusting track gage, small modifications to the wheel and rail profiles, application of friction modifier on the wheel tread or the rail surface, or application of a lubricant on the gage face of the rail or the wheel flange. Crossovers on the Project have been located in areas where they do not cause additional noise impacts at sensitive receivers.
- Audible Warnings at Grade Crossings. Noise mitigation for at-grade rail/roadway crossings will consist of calibrating the bell sound levels to be near the minimum sound level allowed by the CPUC. RT will specify that bells with easily adjustable volumes and adjustable ring rates be installed at the crossings to allow for field calibration. The calibrations will be preformed prior to initiation of revenue service. Reducing the bell sound level to near the minimum allowed by the CPUC is sufficient to reduce the predicted bell noise to a minimum of 6 decibels below the applicable FTA impact thresholds (see Table 4.12-7). Also, if approved by the CPUC, shrouds will be installed on the bells to direct the sound towards the grade crossings and away from the residences and may apply to the CPUC for gate-down-bell-stop variances.
- Vibration. A ballast mat, or equivalent vibration attenuation technique, will be sufficient to reduce all vibration levels to below the vibration impact criterion. Table 4.12-11 of the SFEIS/R indicates the locations along the corridor where mitigation is recommended to reduce vibration levels.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measures are expressly incorporated into the Project approval, are feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: LPAP2 noise levels were projected based on noise measurements of the Sacramento LRT vehicles, the transit operating plan provided in Chapter 2 of the SFEIS/R, and the prediction model specified in the FTA guidance manual. The operating times, headways, speeds, train consists, and other aspects of LRT operations are based on the operating

plan described in Chapter 2. Noise projections near grade crossings include noise from train whistles and crossing bells, the projections of which are based on noise measurements made on similar light rail systems around the country. To account for the intrusive character of the whistles and bells due to pure tones, a 5-dBA penalty is applied to noise levels from these sources in accordance with FTA procedures. The potential vibration impact from LRT operation was assessed on an absolute basis using the FTA criteria. Results are found in the SFEIS/R at Tables 4.12-5, -6, -7, -8, -9, -10 and -11. (SFEIS/R Chapter 4.) By constructing noise barriers and installing sound insulation, the noise from the trains will not travel as far nor will the noise that escapes the barriers and installation be as loud. In order to mitigate vibration impacts, RT will use a ballast mat, or equivalent vibration attenuation technique. This will decrease the amount of vibration to below FTA thresholds. Therefore, implementation of the mitigation measures will reduce the impacts to a less than significant level. The mitigation measures are expressly incorporated in the Project approval.

21. Section 4.13. Population, Housing, and Environmental Justice Impacts.

One residential property (unit) would require relocation for LPAP2 if the optional Center Parkway Pedestrian Overcrossing Option were constructed. [Less Than Significant Impact] Two residential units would be subject to relocation as shown in Table 4.13-6 of the SFEIS/R. [Less Than Significant Impact] Extended LRT service would improve local and regional linkages among neighborhoods, businesses and community facilities with improved travel times in comparison with the No-Action and TSM Alternatives. [Beneficial Impact] Access to employment, education, medical, and retail centers would be improved. [Beneficial Impact] There would not be a disproportionate distribution of these benefits to low income and minority populations. There would be no adverse impacts or disproportionate distribution of adverse impacts to low-income or minority groups. [No Impact]

Mitigation Measure adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

22. Section 4.14. Public Services and Facilities Impacts. Ten community facilities (including recreation facilities) would realize direct benefits of improved transit access as a result of LPAP2. Extending LRT service would also improve accessibility to community facilities in downtown Sacramento and other regional activity centers. [Beneficial Impact]

Mitigation Measure adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA

Guidelines, §§ 15126.4 and 15091.)

23. **Section 4.15. Parks and Recreation Impacts.** Four park and recreational facilities would realize direct benefits of improved transit access. Extending LRT service would also improve accessibility to park and recreational facilities in downtown Sacramento and other regional activity centers. [Beneficial Impact] Design options for the Cosumnes River Boulevard-Bruceville Road transition would differ in their effects to the berm at the northeast corner of the Cosumnes River College stadium. The at-grade option would cut through a portion of the berm, and a new retaining wall would be required along the western portion of the trackway to support the stadium embankment. The flyover option would incorporate part of the berm in the flyover's abutment. There would be no adverse effect on access to or operations or use of the stadium under either the at grade or flyover options. Visual effects are described in Section 4.1 of the SFEIS/R. [Less Than Significant Impact]

Mitigation Measure adopted by RT: None required.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

24. **Section 4.16. Safety and Security Impacts.** Implementation of the Project would have the following impacts:
- Stations, parking lot areas, and the maintenance facility would require the same level of security services as existing facilities. [Potentially Significant Impact]
 - New rail stations would create activity centers with increased pedestrian activity, auto/bus drop-offs/loadings, and park-and-ride lot traffic, and would create the potential for safety and/or security incidents. [Potentially Significant Impact]
 - Large parking areas would increase the risk of vandalism to vehicles. [Potentially Significant Impact]
 - Circulation of autos and pedestrians in park-and-ride lots would create the potential for auto-pedestrian conflicts, primarily during peak periods. [Potentially Significant Impact]
 - Safety and security of LRT passengers at station facilities would be a concern, with peak periods and late evenings typically requiring additional oversight. [Potentially Significant Impact]
 - The reduction of corridor auto traffic is expected to have a beneficial effect on motor vehicle accident rates and resulting injuries. [Beneficial Impact]
 - The LPAP2 LRT 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. [Potentially Significant Impact]
- LPAP2 would not expose children to disproportionate environmental health or safety risk. Short-term construction effects would be mitigated with the measures described in Section 5.2 of the SFEIS/R. At-grade rail crossings would be signalized and would comply with Public Utilities Commission regulations. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: During preliminary engineering for LPAP2, RT has coordinated with security representatives from RT's internal security and the Sacramento City Fire Department to review appropriate security and emergency access provisions at the LRT stations. RT will also:

- Continue to coordinate during final design with security representatives from RT's internal security and the Sacramento City Fire Department to review appropriate security and emergency access provisions at the LRT stations.
- Increase security services and assigned law enforcement personnel for LPAP2, consistent with its security practices.
- Expand fire safety and emergency response training to include fire districts in the South Sacramento Corridor that will be responsible for providing these services.
- Invite public participation regarding station design details during the final design phase of the Project to identify and address safety and security concerns.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measures are expressly incorporated into the Project approval, are feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: As outlined in Section 4.16.1 of the SFEIS/R, RT already has a well-developed program for providing safety and security to its facilities and transit vehicles. Under LPAP2 this existing program would be extended to the new facilities and services. RT has already started planning coordination between police and fire services on the corridor for the future extension. The safety and security measures provided by the mitigation listed would ensure that the station areas are well-monitored and accessible in case of an emergency. They would also decrease the likelihood of any safety or security incidents. Therefore, implementation of the mitigation measures would reduce any significant impacts to a less than significant level.

The improvements proposed under LPAP2 would result in no adverse impacts to educational land uses; safety and security; air quality; or soil. Minor impacts to

water resources are expected as a result of stormwater runoff from the parking lots. Runoff impacts will be mitigated, as discussed in Section 4.9 of the SFEIS/R, to minimize any long-term effect on bodies of water. Thus, there would be no disproportionate health risks to children. (SFEIS/R Chapter 4.)

The mitigation measures are expressly incorporated in the Project approval.

25. **Section 4.17. Utilities Impacts.** Construction could affect underground and above-ground utilities throughout the alignment. RT will continue to plan and coordinate with utility providers during the preliminary engineering and final design to minimize or eliminate interruption in utility service to customers. Some utilities may be moved to the edges of the LPAP2 LRT right-of-way. Where space within the right-of-way is not available, some utilities would be relocated to easements in adjacent properties. 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. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: No mitigation is necessary.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

Chapter 5. Construction Phase Effects.

26. **Subsection 5.2.1. Construction Phase Aesthetics Impacts.** Construction activities and equipment would introduce visual signs of construction in the area, including stockpiling of soils and materials and the use of heavy equipment. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: Although CEQA does not require mitigation for this impact because it is less than significant prior to mitigation, the Project incorporates strategies to achieve a more environmentally protective result than is mandated by CEQA. These measures will include:

- RT will require the contractor to maintain the site in an orderly manner, removing trash, waste, and securing equipment and vehicles at the close of each day's operation.
- To reduce glare from lighting used during nighttime construction activities, RT will require the contractor to direct lighting onto the immediate area under construction only, and to avoid shining lights toward residences and traffic lanes. Nighttime construction would possibly occur only for those activities involving street closures for mitigating impacts to the traveling

- public such as grading and installation of tracks across roadways, installing of grade crossing safety devices and utility relocations.
- To reduce dust the contractor would be required to use water trucks during grading to keep the ground moist.

Significance with Mitigation Measure: RT finds that the impact is less than significant and does not require mitigation. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

27. **Subsection 5.2.2. Construction Phase Agriculture Impacts.** It is not anticipated that construction activities would disturb agricultural land, crops or soils. Construction access roads, staging and equipment laydown areas would be delimited to avoid agricultural property. Provisions will be incorporated into the construction contracts to avoid parking impacts to agricultural land. Construction-phase mitigation measures for air and water quality, traffic and hazardous materials, as described in their respective sections, would also minimize temporary effects on agricultural land. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: Although CEQA does not require mitigation for this impact because it is less than significant prior to mitigation, the Project incorporates strategies to achieve a more environmentally protective result than is mandated by CEQA. These measures will include construction access roads, and staging and equipment laydown areas would be delineated to avoid agricultural property. Provisions will be incorporated into the construction contracts to designate areas for construction worker parking to avoid impacts to agricultural land.

Significance with Mitigation Measure: RT finds that the impact is less than significant and does not require mitigation. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

28. **Subsection 5.2.3. Construction Phase Air Quality Impacts.** Construction activities would generate short-term emissions of dust, fumes, equipment exhaust, pollutants, and other air contaminants. Construction impacts were evaluated based on a “worst-case” scenario in which all Project facilities, including the 2,000 space parking garage at Cosumnes River College Station, would be constructed at the same time, which is unlikely. Under this assumption, the criteria pollutants are not anticipated to exceed the SMAQMD and federal thresholds. [Less Than Significant Impact]

Construction activity would potentially result in traffic delays and associated CO hotspots. CO hotspots typically occur at severely congested intersections with high traffic volumes. Based on the CO hotspot modeling, over 4,000 vehicles would have to idle continuously for one hour to create a CO hotspot during construction activity. Traffic flows would be maintained and diversions would be installed to remove traffic from intersections that would be congested as a result

of construction activity. As such, construction activity would not result in delay to over 4,000 vehicles in one hour and construction activity would not result in the generation of a CO hotspot. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: Although construction activity would not result in an impact exceeding criteria thresholds, RT would establish special provisions in the contract documents to implement the best management practices listed under section 5.2.3.3 of the SFEIS/R to minimize fugitive dust and PM10 for LPAP2. All construction contracts shall require that the contractor warrantee that construction equipment has been properly tuned and shall implement best management practices to minimize idling, avoid sensitive receptor locations, and maximize the use of low emission fuels.

Significance with Mitigation Measure: RT finds that the impact is less than significant and does not require mitigation. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

29. Subsection 5.2.4. Construction Phase Biological Resources Impacts.

Approximately 0.05 acres of wetlands/waters at Morrison Creek/Union House Creek flyover would be temporarily disturbed, which represent potential aquatic habitat for the giant garter snake. In addition, approximately 8.39 acres of potential upland habitat for the giant garter snake may be temporarily impacted. [Less Than Significant Impact] Construction activities and related impacts may disturb riparian and non-native grassland natural communities and indirectly affect a vernal pool that provides 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. [Potentially Significant Impact] There could be a possible loss of Valley Oaks (*Quercus lobata*), Interior Live Oak (*Quercus wislizenii*), and Blue Oak (*Quercus douglasii*) from SRCSD Bufferlands. These trees were planted in 1995 as part of the Trail of Trees effort. [Potentially Significant Impact]

Mitigation Measures Adopted by RT: The following mitigation measures will be implemented:

- Best management practices for water quality shall be implemented.
- Where possible, protect by a 50-foot buffer zone (Environmentally Sensitive Area ("ESA")) with exclusionary fencing habitat for vernal pool fairy shrimp, midvalley fairy shrimp, vernal pool tadpole shrimp, and California linderiella.
- A pre-construction survey of all Project affected aquatic habitat will be completed no more than 24 hours prior to instream construction or

- disturbance of riparian vegetation. If western pond turtles are found, onsite monitoring and possible relocation shall be implemented.
- Where possible, giant garter snake ("GGS") habitat will be protected by a 200-foot buffer zone (ESA) with exclusionary fencing. Construction in GGS habitat should occur preferably from May 1 to October 1. If construction occurs between October 2 and April 30, USFWS may require additional measures. Survey for GGS shall occur 24 hours prior to construction. 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. Any dewatered GGS habitat shall remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling. 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. 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.
 - All temporary fill/debris shall be removed post-construction. All disturbed areas shall be restored to pre-Project conditions, using native grass seed mixes.
 - 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 miles of the Project area. Surveys shall be conducted no more than 30 days prior to the initiation of construction activities. If active nests are found, consultation with USFWS and CDFG will occur to develop avoidance/minimization measures. Raptor or migratory bird nest trees shall be removed outside of the nesting season (February through August), or after the nest is empty and adult and young birds leave the tree.
 - An annual survey for Swainson's hawk nests will be completed from March through August 15. If nests are discovered, consultation with CDFG will occur.
 - A copy of the Biological Opinion will be included within solicitations for design and construction, making the primary contractor responsible for implementation.
 - Measures consistent with Best Management Practices ("BMPs") will be implemented, including Storm Water Pollution Prevent 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 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.

- High visibility fencing will be installed around habitats of federally listed species to identify and protect designated ESAs.
- A Worker Environmental Awareness Training Program will be implemented for construction personnel to be conducted by the USFWS-approved biologist.
- 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.
- Provide a qualified arborist to survey potentially affected trees. To the extent possible, avoid removal of native oaks, mature native riparian trees, and any other protected trees. Compensate for loss of protected trees pursuant to the City of Sacramento Heritage Tree Ordinance.
- Clearing and grubbing procedures that specify that only trees and plants designated for removal shall be removed.
- Excavation techniques would ensure stability of subsurface materials as well as the retention of excavated materials within the construction areas.
- Construction within wetlands would be avoided during the rainy season.
- 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.
- 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.
- RT will maintain and monitor the Project site for one (1) year following the completion of construction and restoration activities.
- 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.
- Prior to construction, RT shall conduct a survey to assess the status of existing elderberry shrubs within the Project site. Construction shall be prohibited within 100 feet of elderberry plants during beetle emergence and mating period. No application of herbicides, insecticides, and/or other chemical agents shall occur within 100 feet of elderberry plants where they might drift into the area of elderberry plants. Protective fencing shall be established around all shrubs that are not removed prior to initiating any construction activities on the site.
- 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.

- All food-related trash items must be disposed of in closed containers and removed at the end of each work day.
- In accordance with the Staff Report on Burrowing Owl Mitigation the following should be considered impacts; disturbance within 160 feet of an occupied burrow, destruction of occupied natural and artificial burrows, and destruction and/or degradation of foraging habitat adjacent (within 330 feet) to an occupied burrow(s). RT or its contractors will conduct a pre-construction survey for western burrowing owls and burrows within 330 feet no more than two weeks before construction. 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. If adverse effects to occupied burrows are unavoidable, the owls shall be passively relocated using techniques approved by CDFG.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: Construction of LPAP2 would cause temporary disturbance to approximately 0.15 acres of wetlands/waters at the Morrison Creek Crossing of the LRT alignment and approximately 0.05 acres of wetlands/waters at the Morrison Creek/Union House Creek/UPRR flyover. LPAP2 construction activities may also disturb vernal pool, riparian and non-native grassland natural communities that provide potentially suitable habitat for a variety of special-status species as shown in Table 4.4-2 of the SFEIS/R. The status of all species with potentially suitable habitat in the Project vicinity is reported in Section 4.4 of the SFEIS/R. Protections are suggested based solely on the presence of potentially suitable habitat, even where it is of relatively low quality. All sensitive habitat and wetland areas that could be avoided during construction would be identified for avoidance during Project design as part of the mitigation of this impact. The preventive measures listed above would adequately address construction-related impacts to wetland areas and special-status species by preventing the disturbance of protected vegetation and wildlife or providing adequate monitoring throughout the construction of the Project to avoid or minimize any potential affect to protected species and their habitat. Therefore, implementation of the mitigation measures will reduce any impacts to a less than significant level. These measures will be reviewed by all appropriate agencies, including the USFWS, CDFG, and the ACOE. (SFEIS/R Chapter 5.) The mitigation measures are expressly incorporated in the Project approval.

30. **Subsection 5.2.5. Construction Phase Cultural Resources Impacts.** Although not anticipated, construction activities could result in the loss or degradation of previously undiscovered cultural resources. [Potentially Significant Impact]
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Mitigation Measures Adopted by RT: If unanticipated cultural materials are unearthed during construction, work in the vicinity of the find would be halted until a qualified archaeologist can assess their significance. If human remains are unearthed during construction, State Health and Safety Code section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code section 5097.88. In either instance, RT shall be immediately notified. 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.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measures are expressly incorporated into the Project approval, are feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: As described in Section 4.5 of the SFEIS/R, Cultural Resources, no archaeological or historic architectural resources have been identified in the Project area of potential effects ("APE"). The same section addresses the potential for previously unidentified cultural resources to exist in portions of the APE that are covered over with pavement or other obstructions. (SFEIS/R Chapter 5.) By halting construction if any unanticipated cultural materials are found and consulting with OHP, the unearthed cultural materials would be properly handled and protected. Therefore, implementation of the mitigation measures will reduce the impact to a less than significant level. The mitigation measures are expressly incorporated in the Project approval.

31. **Subsection 5.2.6. Construction Phase Employment Impacts.** 1,100 on-site, full-time construction positions (person years of employment ("PYE")) and a total of 1,700 positions (PYE) would be generated from implementation of LPAP2. [Beneficial Impact]

Mitigation Measures Adopted by RT: None.

Significance with Mitigation Measure: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

32. **Subsection 5.2.7. Construction Phase Geological and Soils Impacts.** Additional loads may be imposed on existing slopes, potentially resulting in slope instability. Slope instability could adversely affect constructed facilities on or adjacent to slopes and offsite properties. Weak and/or compressible soils may
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be present, particularly at shallow depths in or along creek channels and possibly in areas of existing fill. Such soils are a potential source of excessive settlement for structures and areas of fill, and in some cases their presence can also adversely affect construction operations. Some soils at and near ground surface are expected to exhibit medium to high expansion potential. For such soils, changes in soil volume and strength are associated with changes in moisture content. The presence of expansive soils can adversely affect the service of pavements and slabs on grade. Where exposed in slopes, such cyclic changes in soil volume and strength are commonly associated with the down-slope creep of near-surface soils and shallow slumping. In some locations shallow groundwater would be present and could affect earthwork, construction, and the service of floor slabs and roadbed/hardscape subjected to traffic load. Dewatering that is extensive in depth, volume and/or duration is not likely to be required, and dewatering activities are not expected to modify groundwater levels sufficiently to induce settlement. [Potentially Significant Impact]

Mitigation Measures Adopted by RT: The extent of hazards or other impacts, including slope instability, weak and/or compressible soils, expansive soils, shallow groundwater, and erosion, will be defined by geotechnical studies during the final design of LPAP2. Design requirements to address seismic hazards are discussed in Section 4.7.3 of the SFEIS/R. Design requirements to address the above-identified impacts will be incorporated into the final design and construction specifications. Design requirements that would likely be implemented include: excavation and replacement or lime-treatment of weak or expansive soils, and/or the use of synthetic materials to reinforce or partly replace weak soils and deep foundations, modification or re-grading of slopes, increased set-backs and clearance from slopes, vegetation of slopes, lining channels, excavation and replacement or lime-treatment of weak or expansive soils, and/or the use of synthetic materials to reinforce or partly replace weak soils and deep foundations.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: Construction of LPAP2 may impose additional loads on existing slopes, potentially resulting in slope instability. Slope instability could adversely affect constructed facilities on or adjacent to slopes and offsite properties. Weak and/or compressible soils may be present at various locations affected by construction, particularly at shallow depths in or along creek channels and possibly in areas of existing fill. Such soils are a potential source of excessive settlement for structures and areas of fill, and in some cases their presence can also adversely affect construction operations. Soils at and near ground surface along much of the study area are expected to

exhibit medium to high expansion potential. For such soils, changes in soil volume and strength are associated with changes in moisture content. The presence of expansive soils can adversely affect the service of pavements and slabs on grade. Where exposed in slopes, such cyclic changes in soil volume and strength are commonly associated with the down-slope creep of near-surface soils and shallow slumping. Such impacts could adversely affect LPAP2. Shallow groundwater would be present at some locations, either as a part of the "water table" or as a local and seasonal "perched" condition. Where present, shallow groundwater would affect earthwork and construction and can adversely affect the service of floor slabs and roadbed/hardscape subjected to traffic load. It does not appear likely that dewatering extensively affecting depth, volume and/or duration would be required. Therefore, dewatering activities are not expected to (temporarily or permanently) modify the level of groundwater sufficiently to induce settlement on the LPAP2 LRT alignment or adjacent properties. (SFEIS/R Chapter 5.) By identifying the extent of hazards or other impacts in a geotechnical study prior to the final design phase, the weak and hazardous areas can be identified and the proper measures for dealing with these areas can be drafted and implemented. RT is committed to implementation of proper design requirements to address any areas that are identified in the geotechnical study. The mitigation measures are expressly incorporated in the Project approval.

33. **Subsection 5.2.8. Construction Phase Hazardous Materials Impacts.** There is a likelihood that hazardous waste may be encountered at the locations identified in Table 4.8-1 of the SFEIS/R. Contaminants at these sites may include but are not limited to aerially deposited lead, lead-based paint, MTBE and ACMs. [Potentially Significant Impact]

Mitigation Measures Adopted by RT: Impacts of LPAP2 will be mitigated by implementing the following measures:

- Walking reconnaissance. Walk-through site reconnaissance will be conducted for the known hazardous waste site to identify any additional evidence of contamination.
- Confirming the Status of Remediation Activities. A review will be conducted of the remediation status of the site shown in Table 4.8-1 of the SFEIS/R. 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.
- Site Evaluation. A Phase 2 site-specific evaluation will be made of any known and suspected contaminated sites that would be disturbed 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. 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.

- Worker Health and Safety Plan & Training. To avoid health effects on construction personnel, all personnel who may come in contact with contaminated soil or groundwater would be trained in accordance with the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard (29 CFR 1910.120). A site-specific worker health and safety plan defining potential contaminants and, where appropriate, proper personnel protective equipment would be employed. Proper decontamination procedures for workers and equipment would be followed. When such measures are in place to protect those in closest contact with hazardous substances, impacts to surrounding populations would be avoided.
- Notify Appropriate Regulatory Agencies and Enact Specific Mitigation Plans. 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.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measures are expressly incorporated into the Project approval, are feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: The potential for encountering pre-existing hazardous waste is present during any construction project, particularly within a developed area such as the Project corridor. Impacts would occur if construction workers or members of the public were exposed to hazardous materials during grading and construction activities or if the likelihood of hazardous waste migration were increased by construction activities. (SFEIS/R Chapter 5.) By thoroughly evaluating sites with identified hazardous waste and conducting the proper training and evaluations at sites that may contain unidentified hazardous waste, any potential contamination would be minimized and avoided. Therefore, the mitigation measures would reduce the impact to a less than significant level. The mitigation measures are expressly incorporated in the Project approval.

34. **Subsection 5.2.9. Construction Phase Hydrology, Floodplain, and Water Quality Impacts.** Construction activities would increase the sediment load in stormwater during rainfall events. Sediment sources created during construction include soil stockpiles, soil tracked across construction areas, and soil transported by wind. One or more acres of land would be disturbed, and
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therefore a Stormwater Pollution Prevention Plan ("SWPPP") will be required, in accordance with Section 402 of the federal Clean Water Act. The purpose of a SWPPP is to reduce the amount of construction-related pollutants that are transported by stormwater runoff to surface waters. Groundwater is generally 15 feet below ground surface or deeper. Construction excavation is generally expected to be limited and very localized. It is not anticipated that groundwater would be encountered, however, it cannot be ruled out, particularly in localized areas where deeper excavation is required, such as Meadowview Road under the depressed roadway design option. LPAP2 would require modification of the berm of a detention basin in the vicinity of the proposed Franklin Station. This could result in the temporary loss of flood storage during this phase of construction. [Less Than Significant Impact or Potentially Significant Impact]

Mitigation Measures Adopted by RT: The following mitigation measures will be applied for hydrology, floodplain, and water quality impacts due to construction:

- The contractor will prepare a SWPPP and will identify construction-period Best Management Practices to reduce water quality impacts. The SWPPP will emphasize standard temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas, and will be submitted to the Regional Water Quality Control Board.
- RT will coordinate with SRCSD and the City of Sacramento regarding construction period impacts to the bufferlands detention basin. RT will work with these agencies to ensure that adequate flood storage is maintained during the construction period.
- In the event groundwater is encountered during construction, dewatering would be conducted locally. Dewatering effluent would be tested for contamination. Contaminated effluent would be disposed of in accordance with applicable federal, state and local regulations.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: Construction activities would increase the sediment load in stormwater during rainfall events. Sediment sources created during construction include soil stockpiles, soil tracked across construction areas, and soil transported by wind. LPAP2 will disturb one or more acres of land, and therefore a Stormwater Pollution Prevention Plan (SWPPP) will be required, in accordance with Section 402 of the federal Clean Water Act. The SWPPP will ensure that the sediment load would be minimized during construction and therefore would mitigate the stormwater impacts to a less than significant level. Construction excavation for LPAP2 is expected to be limited

and very localized. Although it is not anticipated that groundwater would be encountered, it cannot be ruled out. By dewatering and testing for contamination, RT would avoid contamination of groundwater during construction. This would mitigate any potential groundwater impacts to a less than significant level. LPAP2 would require modification of the berm of the detention basin in the vicinity of the proposed Franklin Station. Long-term effects of the modification of the detention basin are addressed in Section 4.9.2.1 of the SFEIS/R. (SFEIS/R Chapter 5.) Consultation with applicable agencies concerning the detention basin will ensure that the amount of flood storage will be maintained during construction. Therefore, implementation of this mitigation measure will reduce any impact to the detention basin to a less than significant level. The mitigation measures are expressly incorporated in the Project approval.

35. **Subsection 5.2.10. Construction Phase Land Use Impacts.** No impacts would result from LPAP2. [No Impact]

Mitigation Measures Adopted by RT: None.

Significance with Mitigation Measure: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

36. **Subsection 5.2.11. Construction Phase Mineral and Energy Resources Impacts.** No significant minerals have been identified in the Project area. [No Impact] Construction activity is therefore not anticipated to adversely affect mineral resources. Construction energy requirements are not considered significant. Energy use would represent a small portion of the total energy consumed in the region for the construction of other facilities and for the ongoing operation of commercial, industrial, and residential activities. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: None.

Significance with Mitigation Measure: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

37. **Subsection 5.2.12. Construction Phase Neighborhoods and Businesses Impacts.** Construction of the LPAP2 LRT alignment, station facilities, park-and-ride lots and optional shuttle lot would temporarily affect study area neighborhoods due to street closures, rerouting of transit and vehicular traffic, and movements of construction equipment, materials and vehicles. None would be anticipated to have substantial impacts on the neighborhoods or businesses. There would be temporary intrusions of construction noise and vibration, air emissions, and visual changes. These impacts would also be localized,
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temporary and intermittent; none would be anticipated to substantially affect neighborhoods or local businesses. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: None.

Significance with Mitigation Measure: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

38. Subsection 5.2.13. Construction Phase Noise and Vibration Impacts.

Temporary noise during construction of demolition, utilities relocation and protection, grading and tracks, LRT systems, stations, and park-and-ride lots has the potential to intrude on residents near the construction sites. Most of the construction would consist of site preparation and paving, and would only occur during daytime hours. Temporary noise during construction of new tracks and stations associated with LPAP2 also has the potential to intrude on residents near the construction sites. Most of the construction would consist of site preparation and laying new track, and would only occur during daytime hours. Construction activities that could cause intrusive vibration include vibratory compaction, jackhammers, and use of tracked vehicles such as bulldozers. The most serious sources of construction vibration are blasting and pile driving. There will be no blasting and only limited, if any, pile driving under LPAP2. LPAP2 is subject to the noise ordinance of the County of Sacramento (Chapter 6.68, Noise Control). The ordinance has specific property line noise limits; however, construction from 6 am to 8 pm on weekdays and 7 am to 8 pm on Saturday and Sunday is specifically exempted from these limits. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: Although CEQA does not require mitigation for this impact because it is less than significant prior to mitigation, the Project incorporates strategies to achieve a more environmentally protective result than is mandated by CEQA. In addition to the restrictions in the City and County noise ordinances, LPAP2 will include specific residential property line noise limits in construction specifications for this Project, and perform noise monitoring during construction to verify compliance with the limits. This approach allows the contractor flexibility to meet the noise limits in the most efficient and cost effective manner. RT will also assure that a complaint resolution procedure is in place to rapidly address any problems that may develop. Finally, vibration impacts will be mitigated by including numeric limits in the construction specifications, monitoring vibration, and requiring the contractor to follow the specified limits.

Significance with Mitigation Measure: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

39. **Subsection 5.2.14. Construction Phase Parks and Recreation Impacts.** Construction could involve temporary detours or street closures in the vicinity of the Project. These are expected to have little or no effect on the ability of the public to access local parks and recreational facilities within the study area. Construction of the LPAP2 LRT facilities at the berm of the northeast corner of the Cosumnes River College Stadium would not affect access to or operations of the recreational facility. Construction detours and road closures are described in Section 5.2.17 of the SFEIS/R, Transportation/Traffic. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: None.

Significance with Mitigation Measure: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

40. **Subsection 5.2.15. Construction Phase Public Services and Facilities Impacts.** Construction could involve temporary detours or street closures in the vicinity of the Project, which are expected to have little or no effect on the ability to access public services and facilities within the study area. The primary effect would be the need for emergency vehicles to observe any short-term road closures and temporary construction detours. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: Although CEQA does not require mitigation for this impact because it is less than significant prior to mitigation, the Project incorporates strategies to achieve a more environmentally protective result than is mandated by CEQA. The following mitigation measures would address impacts on public services and facilities:

- RT will coordinate with local emergency service providers in developing detour plans during the Project's final design.
- Emergency service providers would be provided advance notice of road closures and detour routes during construction.

Significance with Mitigation Measure: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

41. **Subsection 5.2.16. Construction Phase Safety and Security Impacts.** Construction activities could expose construction workers, local residents, and employees to potential hazards. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: Although CEQA does not require mitigation for this impact because it is less than significant prior to mitigation, the Project incorporates strategies to achieve a more environmentally protective

result than is mandated by CEQA. The following mitigation measures would address impacts on safety and security:

- RT will require that 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 LPAP2.
- 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.

Significance with Mitigation Measure: RT finds that the impact is less than significant and does not require mitigation. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

42. Subsection 5.2.17. Construction Phase Transportation and Traffic Impacts.

Construction of the connections of existing LRT tracks with new LPAP2 LRT tracks could affect on-going revenue service. Construction at grade crossings would involve closure of individual cross streets for periods of 24 to 48 hours and would disrupt bus services. Affected bus services would need to be temporarily rerouted. Shorter periods of street closures could be done at night. Traffic in the vicinity of the proposed park-and-ride lots could be disrupted by construction equipment and traffic. Construction of LPAP2 LRT improvements would require street closures for 24 to 48 hours at several locations and rerouting of vehicular traffic. Construction activities are not expected to have any substantial impact on availability of parking. Construction workers would be expected to park on-site. [Less Than Significant Impact]

Mitigation Measures Adopted by RT: Although CEQA does not require mitigation for this impact because it is less than significant prior to mitigation, the Project incorporates strategies to achieve a more environmentally protective result than is mandated by CEQA. The following mitigation measures would reduce rail and bus transit impacts while constructing LPAP2:

- RT will coordinate construction with other major public or private construction projects within a one mile radius of the Project and schedule its construction contracts to minimize combined Project impacts to the surrounding community, while at the same time trying to reduce the combined schedule for construction activities.
- Grade-crossing construction that requires street closure will be scheduled so only one crossing in an area is affected at one time; crossings serving as alternate bus travel routes will remain open.
- RT will provide the public and transit users advance notice of proposed transit reroutes and any other changes in stops and service; bus route detours will minimize the number of bus stop changes.

- Construction of at-grade crossings will take place during non-peak periods whenever possible, including at night. In residential areas, major activity will be limited to normal work hours whenever practicable, to avoid noise and related impacts to the local population.
- RT will notify local residents and businesses in advance of proposed construction activity using a variety of techniques including signage, electronic media, community newspapers, and other techniques identified in the Project's public involvement program.
- RT will communicate and coordinate with the CRC and Los Rios Community College Districts regarding the time of any street closures during construction of LPAP2, with particular attention to peak student travel periods.
- As part of their contracts, contractors will be required to prepare and implement traffic handling plans approved by the City of Sacramento, the City of Elk Grove, or Sacramento County, as appropriate. Plans will identify detour routes, signing and barricade locations, turnarounds at street closures, and other traffic control elements.
- As part of their regular Project planning meetings with neighboring jurisdictions, RT will coordinate with the City of Sacramento, the City of Elk Grove, and Sacramento County to provide the public advance notice of proposed traffic detours and their duration.
- Provisions will be incorporated into the construction contracts to avoid parking impacts to residential areas or businesses requiring on-street parking.

Significance with Mitigation Measure: Under CEQA, no mitigation measures are required for impacts that are less than significant or beneficial. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4 and 15091.)

43. **Subsection 5.2.18. Construction Phase Utilities Impacts.** The potential exists for construction activities to encounter unexpected utilities within the Project right-of-way. Relocations of affected utilities in the corridor or at LPAP2 LRT stations or park-and-ride lots will be the responsibility of RT and may require short-term, limited interruptions of service. No interference with existing utility service is anticipated during installations of connections to existing high-voltage power transmission facilities because the utility will put customer loads on alternate feeders during the connection activity. [Potentially Significant Impact]

Mitigation Measures Adopted by RT: The following mitigation measures would reduce impacts to utilities while constructing LPAP2:

- RT will continue close coordination with all utility providers during the construction stages of the Project to identify any potential conflicts and formulate strategies to overcome potential problems.

- A set of detailed plans will be submitted to utility providers for their review and comment prior to the onset of any relocation work.
- Any short-term, limited service interruptions would be scheduled well in advance and appropriate notification provided to users. These interruptions would be discussed and planned at the regular planning meetings between RT and neighboring jurisdictions.

Findings Concerning Impact and Adopted Mitigation Measures

Significance with Mitigation Measure: RT finds that the above-stated mitigation measure is expressly incorporated into the Project approval, is feasible, and will reduce the impact to a **less-than-significant** level.

Facts and Reasoning to Support Finding: Locations of existing utilities, design treatments and construction procedures are described in the SFEIS/R at Section 4.17, Utilities, and shown on the strip maps of LPAP2, Figures 2.4-2 through 2.4-17. RT will coordinate with all utility providers during the design phase of the Project to identify any additional subsurface and overhead utilities so that design treatments and construction procedures can be developed to avoid adverse impacts to existing utilities and prevent disruptions in service. The potential exists, nonetheless, for construction activities for LPAP2 to encounter unexpected utilities within the Project right-of-way. RT will be responsible to determine the manner in which affected utilities in the corridor or at LRT stations or park-and-ride lots will be relocated and might require short-term, limited interruptions of service. No interference with existing utility service is anticipated during installation of connections to existing high-voltage power transmission facilities because the utility will put customer loads on alternate feeders during the connection activity. (SFEIS/R Chapter 5.) By continuing to work closely with utility providers and submit any plans regarding utilities to the providers, RT would ensure that utility consumers would not experience any major interruptions in service. Therefore, the implementation of the mitigation measures will reduce impacts to a less than significant level. The mitigation measure is expressly incorporated in the Project approval.

EXHIBIT B

STATEMENT OF OVERRIDING CONSIDERATIONS

In determining whether to approve the Project, CEQA requires a public agency to balance the benefits of a project against its unavoidable environmental risks. (Cal. Code Regs., tit. 14, § 15093). In accordance with Public Resources Code section 21081(b) and CEQA Guidelines section 15093, RT has, in determining whether or not to approve the proposed Project, balanced the economic, social, technological, academic, and other benefits of the Project against its unavoidable environmental effects, and has found that the benefits of the Project outweigh the significant adverse environmental effects that are not mitigated to less-than-significant levels, for the reasons set forth below. This statement of overriding considerations is based on RT's review of the SDEIS/R and the SFEIS/R and other information in the administrative record. RT finds that each of the following individual benefits is an overriding consideration, independent of the other benefits, that warrants approval of the Project, notwithstanding the Project's significant unavoidable impacts.

Implementation of the mitigation measures discussed in the SFEIS/R will avoid or substantially lessen all but one of the Project's specific significant impacts to less-than-significant levels. The Project's one significant and unavoidable impact is discussed in section 3.4.2 of the SFEIS/R (the impact on the intersection of Franklin Boulevard and Cosumnes River Boulevard in 2012) and paragraph 4(b) above.

RT recognizes that the Project will cause the one significant Project-specific impact listed above. RT has carefully balanced the benefits of the proposed Project against the unavoidable adverse impacts identified in the SFEIS/R and the CEQA Findings of Fact. Notwithstanding the disclosure of impacts identified as significant and which have not been eliminated or mitigated to a less than significant level, RT, acting pursuant to Section 15093 of the CEQA Guidelines, hereby determines that the benefits of the Project outweigh the significant unmitigated adverse impacts.

Specific Findings

A. Project Benefits Outweigh Unavoidable Impacts

The remaining significant and unavoidable impact of the proposed Project is acceptable in light of the social, planning, land use and other considerations set forth herein because the benefits of the proposed Project outweigh the significant and unavoidable adverse environmental impacts of the proposed Project. The considerations and benefits of the Project are listed below.

Travel and Mobility

The Project will promote the goal of better travel and mobility by providing a transportation system that is safe, efficient, and coordinated. It provides a

balanced set of travel alternatives in the South Sacramento Corridor by:

- Expanding transit service in South Sacramento;
- Increasing transit service frequencies, accommodating increased demand, and increasing transit safety, comfort, and reliability;
- Minimizing transit travel times;
- Promoting use of carpools and feeder bus service to access stations and park and ride lots;
- Improving accessibility for the disabled and senior communities; and
- Minimizing demand for parking facilities downtown and at Sacramento City College.

Land Use

The Project will ensure compatibility between land use policies and transportation policies by:

- Encouraging high-density, multi-use development in the proximity of transit stations to increase transit use;
- Encouraging infill development and discouraging the trend toward urban sprawl; and
- Developing and implementing transportation policies and services that reinforce local and regional land use plans and policies.

Financial and Economic Goal

The Project will minimize operating costs as compared to the TSM Alternative because bus operating costs are increasing at a faster rate than rail operating costs. Also, RT has achieved rail operating cost efficiencies and this trend is expected to continue.

Environmental

The Project will provide a transportation system that enhances the physical and natural environment by:

- Minimizing air pollution and facilitating the attainment of air quality standards;
- Minimizing and mitigating noise pollution; and
- Conserving energy.

Community Considerations

The Project will provide a transportation system that is consistent with the needs of corridor residents by:

- Minimizing the disruption of neighborhood cohesiveness and quality of life;
- Maximizing the service to, and mobility of, the transit-dependent and transportation disadvantaged;
- Encouraging the economic revitalization of low-income areas; and
- Seeking a fair distribution of costs and benefits among different population groups.

B. Balance of Competing Goals

RT finds it imperative to balance competing goals in approving the proposed Project and the environmental documentation for the proposed Project. Not every policy or environmental concern has been fully satisfied because of the need to satisfy competing concerns to a certain extent. Accordingly, in one instance RT has chosen to accept an environmental impact because to eliminate it would unduly compromise important economic, technological or other goals. RT finds and determines that the text of the proposed Project approval document and the supporting environmental documentation provide for a positive balance of the competing goals and that the social, planning, land use and other benefits to be obtained by the proposed Project outweigh the environmental and related potential impacts of the proposed Project.

Overriding Considerations

Substantial evidence is included in the record of these proceedings and in documents relating to the Project demonstrating the travel and mobility, land use, financial, environmental, and community benefits which RT and Sacramento County residents would derive from the implementation of the proposed Project. RT has balanced the considerations of the proposed Project against the one remaining unavoidable environmental impact identified in the SDEIS/R and SFEIS/R and concludes that the travel and mobility, land use, financial, environmental, and community benefits that will be derived from the implementation of the proposed Project outweigh the environmental impacts. These are addressed in RT's CEQA Findings of Fact. In particular, RT considered whether there would be any impacts related to: transportation and parking, aesthetics, agriculture, air quality, biological resources, historic and cultural resources, EMF and EMI interference, geology and soils, hazardous wastes, hydrology, land use and planning, mineral and energy resources, noise and vibration, population and housing, public services and facilities, recreational facilities, safety and security, and utilities. These categories were analyzed for both project impacts and construction phase impacts. Upon balancing the environmental risks and countervailing benefits, RT concludes that the travel and mobility, land use, financial, environmental, and community benefits which RT and Sacramento County residents will derive from the implementation of the Project outweigh those environmental risks.

The proposed Project 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 ten-minute average headways during peak hours of service and have a maximum speed of 55 mph. LPAP2 consists of approximately 4.3 miles of dual LRT tracks from the existing Meadowview Road station to Cosumnes River College. LPAP2 includes four stations: 1) Morrison Creek Station (with a park-and-ride lot for 50 spaces); 2) Franklin Boulevard Station (with a park-and-ride 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 a park-and-ride structure with 2,000 spaces).

RT finds that the above described benefits which will be derived from implementing the Project, when weighed against the absence of the Project, override the significant and unavoidable environmental impacts of the proposed Project.

Incorporation by Reference

The SDEIS/R and SFEIS/R are hereby incorporated into these findings in their entirety. Without limitation, this incorporation is intended to elaborate on the scope and nature of mitigation measures, the basis for determining the significance of impacts, the comparative analysis of alternatives, and the reasons for approving the Project in spite of the potential for associated significant unavoidable adverse impacts.

Summary

Based on the foregoing findings and the information contained in the Record, RT has made one or more of the following findings with respect to each of the significant environmental effects of the Project:

1. Changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant effects on the environment.
2. Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
3. Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.

Based on the foregoing findings and the information contained in the record, it is determined that:

1. All significant effects on the environment due to the approval of the Project have been eliminated or substantially lessened where feasible.

2. Any remaining significant effects on the environment found to be unavoidable are acceptable due to the factors described in the Statement of Overriding Considerations above.

Conclusion

RT has balanced the specific economic, legal, social, technological and other benefits against the unavoidable environmental risks identified in the SDEIS/R and SFEIS/R, and has concluded that the benefits of the proposed Project outweigh those unavoidable environmental risks. RT has determined that any remaining environmental effects attributable to the proposed Project that are found to be unavoidable in the CEQA Findings of Fact, are acceptable due to the overriding concerns set forth in this Statement of Overriding Considerations. As a result, RT finds that the remaining significant adverse impacts are acceptable to RT and that the proposed Project with mitigation should be approved.

RT further finds that each of the benefits or reasons described above in this Statement of Overriding Considerations is individually sufficient by itself to outweigh and override the environmental risks and support the approval of the proposed Project.

In conclusion, RT finds that any remaining significant adverse impacts attributable to the Project are acceptable to RT due to the overriding concerns set forth in this Statement of Overriding Considerations. RT has concluded that with the unavoidable environmental risks, the proposed Project with feasible mitigation should be approved.

EXHIBIT C
MITIGATION MONITORING PLAN

EXHIBIT C

MITIGATION MONITORING PROGRAM ENVIRONMENTAL IMPACT REPORT

SACRAMENTO REGIONAL TRANSIT

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INTRODUCTION

Purpose

This mitigation monitoring program is developed pursuant to Public Resources Code (California Environmental Quality Act) §21081.6. This section requires all lead agencies responsible for certifying an environmental impact report (EIR) with mitigation measures or adopting a mitigated negative declaration to prepare and approve a mitigation reporting or monitoring program. The reporting or monitoring program is to be structured as necessary to ensure that changes to the project that the lead agency has adopted to mitigate or avoid significant effects on the environment are carried out during project implementation.

Project and Monitoring Responsibilities

The Sacramento Regional Transit District ("RT") adopted this mitigation monitoring program for the South Sacramento Corridor Phase 2 SFEIS/SFEIR Project. Monitoring assignments are made based on the expertise or authority of the person(s) assigned to monitor the specific activity. For changes that have been required or incorporated into the project at the request of an agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by RT, prepare and submit a proposed reporting or monitoring program.

Mitigation Monitoring Program

The mitigation monitoring program of the attached matrix identifying the mitigation measures, the responsible party, the monitoring activity, schedule for completion, and the date of completion to be initiated by the appropriate RT Division Director. These categories are further explained as follows:

Description of Impacts and Mitigation Measures

This is a summary of the impacts and mitigation measures as described in the Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR). The section numbers for the mitigation measures correspond with the section number in the mitigation summary table in the certified EIR for this project.

Lead Agency

The lead agency is the agency or individual with responsibility for ensuring the mitigation measure is carried out.

Implementing Agency

The monitoring agency is the public agency with responsibility for monitoring to ensure that the mitigation measure is effective in mitigating the impact.

Timing

Timing specifies the date or project phase by which the mitigation measure is to be initiated and completed.

Monitoring Record

This section provides for recording compliance and monitoring over time and would be initialed by the RT Division Director who supervises the person assigned responsibility for monitoring compliance with the applicable mitigation measures.

Updating Monitoring Program

If a subsequent or supplemental EIR or negative declaration is prepared for this project, this monitoring program shall be amended to take into effect any new or changed mitigation measures that may be required under the subsequent or supplemental EIR/negative declaration.

Completion of Monitoring Program

Upon completion of the monitoring program, the attached summary matrix will be submitted to the RT General Manager for acceptance and approval. If the monitoring program and all mitigation measures are completed as specified in the certified EIR for the South Sacramento Corridor Phase 2 SFEIS/SFEIR Project, the General Manager shall accept, date, and sign the matrix summary. If a mitigation measure or measures were not properly implemented, the General Manager shall take such action as is required to comply with the California Environmental Quality Act ("CEQA"). The attached summary matrix shall be annotated to summarize the actions so taken before the General Manager accepts, dates, and signs the matrix.

Project Records

The originally signed matrix summary shall be maintained with the records for the project.

Coordination with RT's Quality Assurance Program

This mitigation monitoring program is part of RT's overall quality assurance program for the light rail extensions. The measures adopted in this Mitigation Monitoring Program are to be implemented throughout the following project stages:

- 1) Final Design
- 2) Mobilization
- 3) Construction
- 4) Pre-Service Testing
- 5) Operations

The elements that are specified for implementation during final design are meant to be included in the appropriate design drawings and specifications; by inclusion in the final design, these measures will be carried out during construction.

The measures that are specified for implementation during the construction phase are to be included in the construction contract specifications during the final design phase. The remaining measures will be incorporated in an on-going safety and quality assurance program by RT staff.

LONG TERM IMPACTS

This section contains mitigation measures for long-term impacts. These measures generally require monitoring of system operations over time and the modification of those operations to reduce adverse environmental impacts. Compliance with these measures would result in the reduction of adverse environmental impacts.

3.3 Traffic and Transportation

Description of Impact and Mitigation Measure 3.3.9	<p>Impact on Intersections: Under the LPAP2, operations at five intersections in the City of Sacramento and one intersection in the County of Sacramento are projected to exceed thresholds.</p> <p>Parking: The LPAP2 is projected to reduce downtown parking demand by about 1,300 spaces (in 2025).</p>	
	T-1	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.
	T-2	Franklin Boulevard & CRB: provide overlap for all right turn phases.
	T-3	Bruceville Road & CRC: Add a second eastbound left turn lane & add a shared through-right turn lane.
	T-4	Bruceville Road & Old Calvine Road: provide overlap signal phasing on the right turn.
	T-5	CRC new South Access & Old Calvine Road: Signalize the intersection.
	T-6	Auberry Drive & Calvine Road: provide protected phasing for the northbound and southbound approaches.
	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 through right.
	T-11	Bruceville Road & CRB: provide overlap for all right turn phases.
	T-12	Bruceville Road & Sheldon Road: provide overlap for all right turn phases.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during the final design and construction phases of the project
	Complete:	Before initiation of LRT operations

Date	Signature of Monitor	Action/Accomplishments

3.3.7 Delays at Grade Crossings

Description of Impact and Mitigation Measure 3.3.7	Increased queue times and decreased efficiency at grade crossings	
	T-7	RT will implement crossing signal control measures at LRT grade crossings adjacent to stations.
	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.
	T-9	Express trains not stopping at a near side station would have equipment to bypass the timed delay.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during the final design and construction phases of the project
	Complete:	Before initiation of LRT operations

Date	Signature of Monitor	Action/Accomplishments

4.1 Visual and Aesthetics

Description of Impact and Mitigation Measure 4.1.5	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.	
	V&A-1	RT will invite public participation regarding station and noise wall design during the final design phase of the project.
	V&A-2	RT will incorporate landscaping into the final design to soften views of LPAP2 LRT stations, PNR lots, substations and the optional shuttle lot.
	V&A-3	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.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	During construction phases of the project
	Complete:	Before initiation of LRT operations

Date	Signature of Monitor	Action/Accomplishments

4.4

Biological Resources

Description of Impact and Mitigation Measure 4.4.6	<p>Loss of 0.311 acres of jurisdictional wetlands for the LPAP2. 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. Possible loss of Valley oaks (<i>Quercus lobata</i>), interior live oak (<i>Quercus wislizenii</i>), and blue oak (<i>Quercus douglasii</i>) from SRCSD Bufferlands. Trees planted in 1995 as part of the Trail of Trees effort.</p>	
	B-1	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.
	B-2	Transplant directly affected elderberry shrubs and purchase the appropriate number of beetle habitat credits at a USFWS-approved conservation bank prior to ground breaking.
	B-3	Purchase equivalent of 9.823 acres of giant garter snake habitat credits from a USFWS-approved conservation bank.
	B-4	Consult with SRCSD Bufferlands manager to explore opportunities to compensate for impacts to nesting and foraging habitat for special-status bird species.
	B-5; B-6	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.
	B-7	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.
	B-8	Will obtain all necessary permits pertaining to affected waters of the U.S. The permitting process would also require compensation for project-related impacts.
	B-9	Purchase mitigation credits in an agency-approved wetland mitigation bank or an in lieu fee.

Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District in cooperation with the S	
Monitoring Agency	California Department of Fish and Game, U.S. Fish and Wildlife Service and/or U.S. Army Corps of Engineers, as applicable	
Timing	Start:	Before any construction or grading within 125 feet of any of the identified biological resources or their associated habitat
	Complete:	On-going

Date	Signature of Monitor	Action/Accomplishments

4.5 Cultural Resources

Description of Impact and Mitigation Measure 4.5.4	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.	
	H&C-1	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.
	H&C-2	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.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District, the cities and County	
Monitoring Agency	Sacramento Regional Transit District in coordination with the State Historic Preservation Officer	
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project

Date	Signature of Monitor	Action/Accomplishments

4.6 Electromagnetic Fields (EMF) and Electromagnetic Interference (EMI)

Description of Impact and Mitigation Measure 4.6.3	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.	
	EMF-1	The potential for EMI effects can be minimized by ensuring that all electronic equipment is operated with a good electrical ground and that proper shielding is provided for electronic system cords, cables, and peripherals.
	EMF-2	Specialized components, such as filters, capacitors and inductors that can also reduce EMI susceptibility of certain systems will be installed, as appropriate.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	During construction phases of the project
	Complete:	Before initiation of LRT operations

Date	Signature of Monitor	Action/Accomplishments

4.8

Hazardous Wastes and Materials

Description of Impact and Mitigation Measure 4.8.3	<ul style="list-style-type: none"> • 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. • 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. <p>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.</p>	
	HW-1	Exposed soil in the median or on the shoulder of highways and primary traffic corridor that are more than 20 years old will be tested for lead prior to beginning of construction.
	HW-2	The three buildings subject to demolition will be inspected (and tested as necessary) for asbestos containing materials and lead based paints.
	HW-3	Contractors will incorporate procedures into a construction management plan describing how they will monitor for subsurface contamination.
	HW-4	Prepare and implement a contingency plan for handling/disposing of contaminated soil and groundwater
	HW-5	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.
	HW-6	Perform Phase 2 site investigations where indicated.
	HW-7	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.
	HW-8	All materials deemed to be hazardous will be remediated and/or disposed of following applicable regulatory agency regulations and/or guidelines.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District and the UPRR	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project

Date	Signature of Monitor	Action/Accomplishments

4.9 Hydrology, Floodplain and Water Quality

Description of Impact and Mitigation Measure 4.9.3.1 & 4.9.3.2	<p>From Morrison Creek to Union House Creek, and from 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>	
	WQ-1	Develop final floodplain mitigation plan in consultation with ACOE and SAFCA.
	WQ-2	In the unlikely event the SSCS project is delayed and floodplain protection is not in place, mitigation measures will be incorporation into the LPAP2 design to minimize impacts due to potential flooding.
	WQ-3	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.
	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.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District in cooperation with ACOE and SAFCA.	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project. Ongoing maintenance.

Date	Signature of Monitor	Action/Accomplishments

4.12 Noise and Vibration

Description of Impact and Mitigation Measure 4.12.7 & 4.12.8	<p><u>Noise</u> 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 348 (57 “Moderate” and 291 “Severe”) to 378 (53 “Moderate” and 325 “Severe”).</p> <p><u>Design Requirements/RT Practices:</u> Maintain track and vehicles regularly to reduce noise levels from vehicles.</p> <p><u>Vibration:</u> Vibration impacts along the full LPAP2 alignment would be the same for all design options selected, with the number of homes affected being 29.</p>	
	N&V-1	Noise barriers will be constructed to mitigate noise impacts in compliance with FTA and RT criteria.
	N&V-2	Sound insulation could be considered for residences near the Meadowview Road At-Grade Option and N. Laguna Drive, south of CRB.
	N&V-3	RT will coordinate mitigation with SAFCA, ACOE, and City of Sacramento to address barrier needs of South Sacramento Corridor Phase 2, flood control, and CRB Widening and Extension projects.
	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.
	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.
	N&V-6	Ballast mats would be used to reduce vibration levels in sensitive areas.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency		
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during the final design and construction phases of the project
	Complete:	Before initiation of LRT operations

Date	Signature of Monitor	Action/Accomplishments

4.16 Safety and Security

Description of Impact and Mitigation Measure 4.16.4	<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>S-1 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.</p>
	<p>S-2 Provide safety and security services by increasing contract security services and assigned law enforcement personnel.</p>
	<p>S-3 Expand fire safety and emergency response training to include five districts that will be responsible for providing these services.</p>
	<p>S-4 Invite public participation regarding station design details during the final design phase of the project to identify and address safety and security concerns.</p>
Lead Agency	<p>Sacramento Regional Transit District</p>
Implementing Agency	<p>Sacramento Regional Transit District in cooperation with the Sacramento City Police Department and the Sacramento County Sheriff's Office</p>
Monitoring Agency	<p>Sacramento Regional Transit District</p>
Timing	<p>Start: Before and during the final design and construction phases of the project</p>
	<p>Complete: Before initiation of LRT operations</p>

Date	Signature of Monitor	Action/Accomplishments

PROJECT CONSTRUCTION IMPACTS

This section contains mitigation measures to be implemented before, during and immediately following project construction. These measures generally require the construction manager to implement special procedures during construction. Compliance with these measures would result in minimizing, rectifying or reducing adverse environmental impacts.

5.2.1 Construction-Phase Impact on Aesthetics

Description of Impact and Mitigation Measure 5.2.1.2	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.	
	CA-1	RT will require the contractor to maintain the site in an orderly manner, removing trash, waste, and securing equipment and vehicles at the close of each day's operation.
	CA-2	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.
	CA-3	To reduce dust, the contractor would be required to use water trucks during grading to keep the ground moist.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	During construction phases of the project
	Complete:	Before initiation of LRT operations

Date	Signature of Monitor	Action/Accomplishments

5.2.3 Construction-Phase Impact on Air Quality

Description of Impact and Mitigation Measure 5.2.3.3	<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 assumption, construction emissions are not anticipated to exceed the SMAQMD and federal thresholds. However, mitigation measures are recommended to reduce construction emissions.</p>
	<p>CAQ-1 Construction area and vicinity will be swept and watered at least twice daily.</p>
	<p>CAQ-2 Unpaved roads, parking and staging areas will be watered at least once every two hours of active operations.</p>
	<p>CAQ-3 Site access points will be swept/washed within 30 minutes of visible dirt deposition.</p>
	<p>CAQ-4 On-site stockpiles of debris or dirt will be enclosed, covered or watered at least twice daily.</p>
	<p>CAQ-5 All haul trucks hauling materials will be covered and will maintain at least two feet of freeboard.</p>
	<p>CAQ-6 Haul trucks will have the capacity of no less than 12.75 cubic yards.</p>
	<p>CAQ-7 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>CAQ-8 Operations on any unpaved surfaces will be suspended when winds exceed 25 mph.</p>
	<p>CAQ-9 Traffic speeds on unpaved roads will be limited to 15 miles per hour.</p>
	<p>CAQ-10 Operations on any unpaved surfaces will be suspended during first and second stage smog alerts.</p>
	<p>CAQ-11 Truck loading zones will be maintained in the construction area.</p>
	<p>CAQ-12 Temporary traffic control will be provided during all phases of construction activities to improve traffic flow.</p>
	<p>CAQ-13 Best efforts will be used to limit truck idling to no more than two minutes.</p>
	<p>CAQ-14 Non-toxic soil stabilizers (according to manufacturers’ specifications) will be applied to all inactive construction areas.</p>
	<p>CAQ-15 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>

	CAQ-16	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.
	CAQ-17	Off-road diesel-powered equipment emissions will not exceed 40% opacity for more than three minutes in any one hour.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District	
Monitoring Agency	Sacramento Regional Transit District and SMAQMD	
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project

Date	Signature of Monitor	Action/Accomplishments

5.2.4

Construction-Phase Impacts on Biological Resources

Description of Impact and Mitigation Measure 5.2.4.2	<p>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.</p> <p>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.</p> <p>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.</p>	
	CB-1	Include a copy of the Biological Opinion within solicitations for design and construction, making the primary contractor responsible for implementation.
	CB-2	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 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.
	CB-3	Clearing and grubbing procedures that specify that only trees and plants designated for removal shall be removed.
	CB-4	Excavation techniques would ensure stability of subsurface materials as well as the retention of excavated materials within the construction areas.
	CB-5	Construction within wetlands would be avoided during the rainy season.
	CB-6	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.
	CB-7	Post-construction, remove all temporary fill/ debris. Restore disturbed areas to pre-project conditions, using native grass seed mixes.

CB-8; CB-9	Install high visibility fencing around habitats of federally listed species to identify and protect designated ESAs.
CB-10	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.
CB-11	Implement a Worker Environmental Awareness Training Program for construction personnel to be conducted by the USFWS-approved biologist.
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.
CB-13	All food-related trash items must be disposed of in closed containers and removed at the end of each work day.
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.
CB-15	RT will maintain and monitor the project site for one (1) year following the completion of construction and restoration activities.
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.
CB-17	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.
CB-18	Prior to construction, RT shall conduct a survey to assess the status of existing elderberry shrubs within the project site.
CB-19	Construction shall be prohibited within 100 ft. of elderberry plants during beetle emergence and mating period.
CB-20	No application of herbicides, insecticides, and/or other chemical agents shall occur within 100 feet of elderberry plants or where they might drift or wash into the area of elderberry plants.
CB-21	Protective fencing shall be established around all shrubs that are not removed prior to initiating and construction activities on the site.
CB-22	Post-construction walkthrough will be conducted to assess whether any damage occurred to vegetation within the buffer areas.

CB-23	Pre-construction survey of all project affected aquatic 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.
CB-24	Construction in GGS habitat is preferably from May 1 to October 1. If between October 2 and April 30 USFWS may require additional measures.
CB-25	Where possible, giant garter snake habitat will be protected by a 200-foot buffer zone.
CB-26	Best management practices for water quality will be implemented during construction.
CB-27	Any dewatered GGS habitat shall remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling.
CB-28	Survey for GGS 24 hours prior to construction.
CB-29	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.
CB-30	A USFWS-approved biological monitor shall be present during construction within suitable habitat.
CB-31	Clearing will be confined to the minimal area necessary to facilitate construction activities.
CB-32	Following completion of construction, all temporary fill and construction debris will be removed from the project and disturbed areas will be restored to pre-project conditions.
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.
CB-34	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.
CB-35	Surveys shall be conducted no more than 30 days prior to the initiation of construction activities.
CB-36	If active nests are found, consult with USFWS and CDFG to develop avoidance/ minimization measures.
CB-37	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.
CB-38	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.

	CB-39	Annual survey for Swainson's hawk nests from March-August 15. If nests are discovered, consult with CDFG.
	CB-40	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).
	CB-41	Pre-construction survey for western burrowing owls and burrows within 330 feet no more than two weeks before construction.
	CB-42	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.
	CB-43	If adverse effects to occupied burrows are unavoidable, the owls shall be passively relocated using techniques approved by CDFG.
Lead Agency		Sacramento Regional Transit District
Implementing Agency		Sacramento Regional Transit District
Monitoring Agency		California Department of Fish and Game, U.S. Fish and Wildlife Service and/or U.S. Army Corps of Engineers, as applicable
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project and for appropriate monitoring periods to determine the effectiveness and success of planting and habitat restoration.

Date	Signature of Monitor	Action/Accomplishments

5.2.5 Construction-Phase Cultural Resource Effects

Description of Impact and Mitigation Measure 5.2.5.1	Although not anticipated, construction activities could result in loss or degradation of previously undiscovered cultural resources.	
	CC-1	If cultural materials are unearthed during construction, work in the vicinity would be halted until a qualified archaeologist can assess their significance.
	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.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District, the cities and County	
Monitoring Agency	Sacramento Regional Transit District in coordination with the State Historic Preservation Officer	
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project

Date	Signature of Monitor	Action/Accomplishments

5.2.7 Construction-Phase Geological and Soils and Seismicity Impacts

Description of Impact and Mitigation Measure 5.2.7.2	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.	
	CG&S-1	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, and lining of channels.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project

Date	Signature of Monitor	Action/Accomplishments

5.2.8 Construction-Phase Effects due to Hazardous Wastes

Description of Impact and Mitigation Measure 5.2.8.2		Previously unidentified contamination may be encountered.	
	CHW-1	Walk-through site reconnaissance will be conducted for each of the site areas to identify any additional evidence of contamination.	
	CHW-2	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.	
	CHW-3	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. 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.	
	CHW-4	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.	
	CHW-5	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.	
Lead Agency		Sacramento Regional Transit District	
Implementing Agency		Sacramento Regional Transit District	
Monitoring Agency		Sacramento Regional Transit District in cooperation with State Department of Toxic Substances Control, Sacramento County Environmental Health Department	
Timing		Start:	Before and during project construction
		Complete:	Upon completion of the construction phase of the project
Date	Signature of Monitor		Action/Accomplishments

5.2.9 Construction-Phase Impact on Hydrology, Floodplain and Water Quality

Description of Impact and Mitigation Measure 5.2.9.2	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.	
	CHF&Q-1	The contractor will prepare a SWPPP identifying Best Management Practices to reduce water quality impacts.
	CHF&Q-2	RT will coordinate with SRCSD and the City of Sacramento regarding impacts to the detention basin and to maintain flood storage during construction.
	CHF&Q-3	If groundwater is encountered, dewatering will be conducted and contaminated effluent disposed of per applicable regulations.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District, the cities and County	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project

Date	Signature of Monitor	Action/Accomplishments

5.2.12 Construction-Phase Impact on Neighborhoods and Businesses

Description of Impact and Mitigation Measure 5.2.12.3	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.	
	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.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District, the cities and County	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project

Date	Signature of Monitor	Action/Accomplishments

5.2.13 Noise and Vibration during Construction

Description of Impact and Mitigation Measure 5.2.13.1	Temporary noise during construction of new tracks, stations, and traction power substations may adversely affect nearby residents. Most severe conditions would occur if construction were concurrent with that of the CRB Widening, CRB Extension and levee system improvement projects (by others).	
	CN&V-1	RT will include specific residential property line noise limits in the construction specifications for this project, and perform noise monitoring during construction to verify compliance with the limits.
	CN&V-2	Perform noise monitoring during construction to verify compliance with the limits.
	CN&V-3	Assure that a compliant resolution procedure is in place to rapidly address any problems that may develop.
	CN&V-4	Vibration impacts will be mitigated by including numeric limits in the construction specifications, monitoring vibration, and requiring the contractor to follow the specified limits.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District i	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during the final design and construction phases of the project
	Complete:	Before initiation of LRT operations

Date	Signature of Monitor	Action/Accomplishments

5.2.15 Construction Impacts on Public Services and Facilities

Description of Impact and Mitigation Measure 5.2.15.2	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.	
	CPS-1	RT will coordinate with local emergency service providers in developing detour plans.
	CPS-2	Emergency service providers would be provided advance notice of road closures and detour routes.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during the final design and construction phases of the project
	Complete:	Before initiation of LRT operations

Date	Signature of Monitor	Action/Accomplishments

5.2.16 Safety and Security during Construction

Description of Impact and Mitigation Measure 5.2.16.2	Construction activities could expose construction workers, local residents, and employees to potential safety hazards.	
	CS-1	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.
	CS-2	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.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during the final design and construction phases of the project
	Complete:	Before initiation of LRT operations

Date	Signature of Monitor	Action/Accomplishments

5.2.17 Traffic and Transportation during Construction

Description of Impact and Mitigation Measure 5.2.17.2, 5.2.17.5 & 5.2.17.8	<p>- <u>Rail Services</u>: 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>- <u>Bus Services</u>: 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>Vehicular Traffic</u>: 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>	
	CT-1	Coordinate construction with other major work in the vicinity.
	CT-2	Grade-crossing construction that requires street closure will be scheduled so only one crossing in an area is affected at one time
	CT-3; CT-8	Provide the public and transit users advance notice of proposed transit reroutes and any other changes in stops and service.
	CT-4	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.
	CT-5	RT will notify local residents and businesses in advance of proposed construction activity.
	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.
	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.
	CT-9	Construction contracts will include provisions to avoid parking impacts to residential areas or businesses requiring on-street parking.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during the final design and construction phases of the project
	Complete:	Before initiation of LRT operations

Date	Signature of Monitor	Action/Accomplishments

5.2.18 Construction-Phase Effects on Utilities

Description of Impact and Mitigation Measure 5.2.18.2	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.	
	CU-1	RT will continue close coordination with all utility providers during construction to identify any potential conflicts and formulate strategies to overcome potential problems.
	CU-2	A set of detailed plans will be submitted to utility providers for their review and comment prior to the onset of any relocation work.
	CU-3	Schedule any service interruptions in advance and ensure appropriate notification to users.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District, in coordination with MCU, US Sprint, Pacific Bell, SMUD, AT&T, PG&E, SCRSD, Sacramento Cable, the cities and UPRR	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project

Date	Signature of Monitor	Action/Accomplishments

5.2.19.1

Cumulative Construction-Phase Impacts

Description of Impact and Mitigation Measure 5.2.19.2	In the event that construction of any or all of the related projects occurs simultaneously with the construction of the TSM or LPAP2 Alternative of the South Sacramento Corridor Phase 2 project, cumulative construction phase impacts could result	
	CC-P1	Develop traffic handling plans to minimize impacts to the traveling public.
	CC-P2	Develop traffic handling plans and detour routes in coordination with emergency service providers to prevent adverse impacts to emergency service delivery.
	CC-P3	Coordinate with other project proponents, as necessary, in the development of public information messages regarding the timing and location of construction activities, temporary detours, and specific measures to be undertaken to reduce construction impacts.
	CC-P4	Continue to coordinate with all utility providers during the construction stages of the project to identify any potential conflicts and formulate strategies to overcome potential problems.
Lead Agency	Sacramento Regional Transit District	
Implementing Agency	Sacramento Regional Transit District,	
Monitoring Agency	Sacramento Regional Transit District	
Timing	Start:	Before and during project construction
	Complete:	Upon completion of the construction phase of the project

Date	Signature of Monitor	Action/Accomplishments