

PROJECT STUDY REPORT EQUIVALENT
for the

**RIEGO ROAD/BASELINE ROAD
WIDENING PROJECT**

OCTOBER 2020

PREPARED FOR:
PLACER COUNTY TRANSPORTATION PLANNING
AGENCY, COUNTY OF SUTTER, COUNTY OF PLACER,
CITY OF ROSEVILLE



BY:

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This Project Study Report Equivalent has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.



9/25/2020

REGISTERED CIVIL ENGINEER

DATE



APPROVAL RECOMMENDED:



12/30/2020

Placer County Transportation Planning Agency

DATE



County of Sutter

12/21/2020
DATE

Vicinity Map

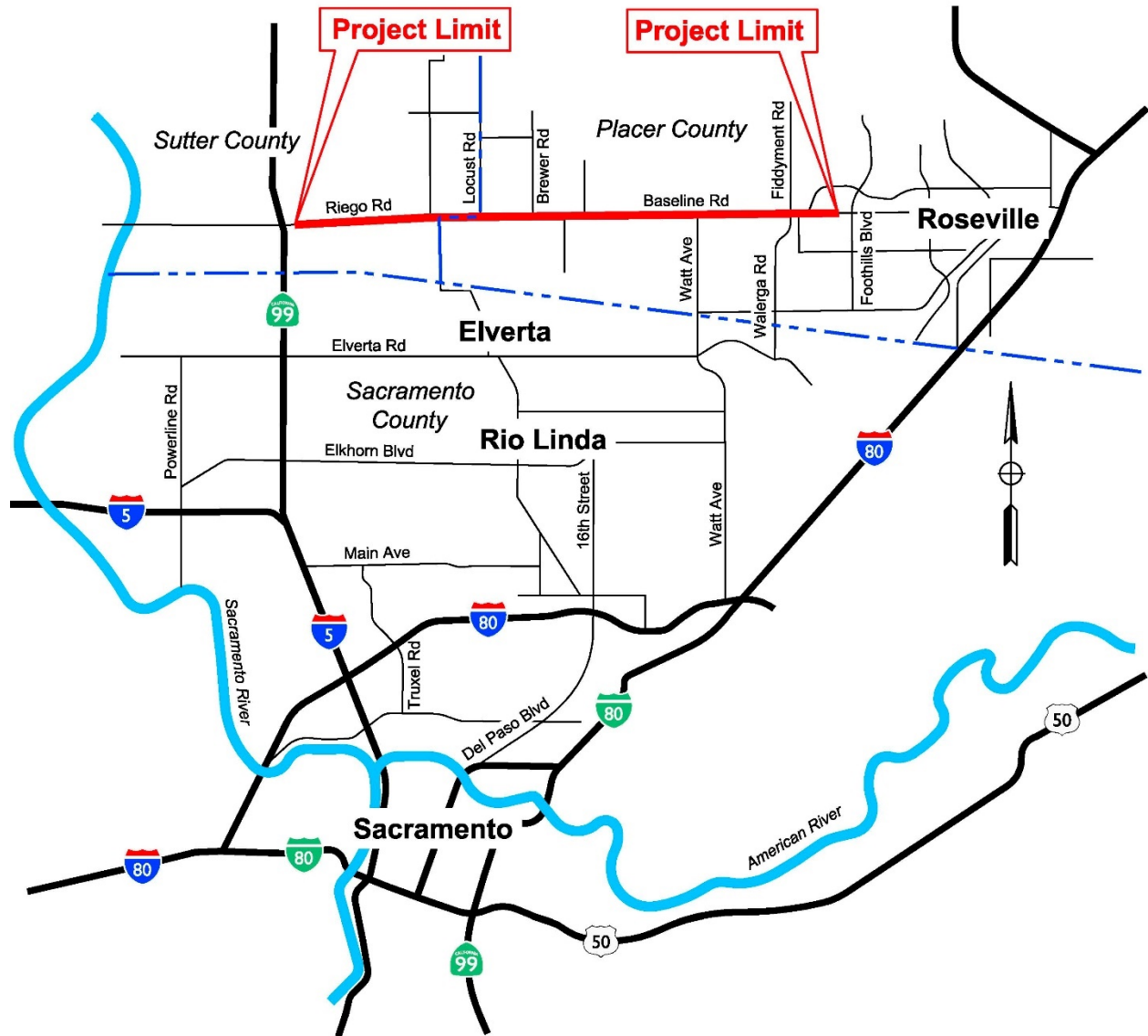


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INTRODUCTION

The Project Study Report Equivalent (PSR Equivalent) was originated by Placer County Transportation Planning Agency (PCTPA) to properly scope the Riego Road/Baseline Road Widening Project from State Route 99 to Foothills Boulevard (Project). Additionally, the PSR Equivalent will establish a high level, but detailed, cost estimate and timeline for the environmental process, design construction documents and start construction date for the project. Finalizing this effort by October 2020 will allow PCTPA to compete for grant funding for this regionally significant project.

As economic growth and planned development continue along the Riego Road/Baseline Road corridor, the once rural area has transformed over the past decade and the two-lane road is experiencing traffic congestion. An estimated 20,000 vehicles per day currently travel on the road, and as more home construction occurs, the number is expected to double to 40,000.

As a partnership between four agencies, PCTPA, County of Sutter, County of Placer and City of Roseville, propose to widen the existing Riego Road/Baseline Road from two lanes to four lanes to accommodate the anticipated traffic growth.

The project includes widening Riego Road/Baseline Road to four lanes (interim condition) from State Route 99 to Foothills Boulevard (12 miles), and includes a two-way left turn lane, vehicular, transit, bike, and pedestrian infrastructure. In the future, the corridor is planned to be widened to six lanes (ultimate condition) to accommodate the planned traffic growth.

Table 1 below provides a summary of the Project.

Table 1: Project Summary

Project Limits	Riego Road/Baseline Road from State Route 99 to Foothills Boulevard
Number of Alternatives	2 Build Alternatives and a No Build Alternative
Capital Outlay Support Cost Range	\$22,512,000 - \$24,927,000
Capital Outlay Construction Cost Range	\$87,730,000 - \$97,780,000
Capital Outlay Right of Way Cost Range	\$9,228,000 - \$10,075,000
Capital Outlay Environmental Mitigation Cost Range	\$2,531,000 - \$2,820,000
Total Project Cost Range	\$122M-\$136M
Type of Facility	4 Lane Arterial with a Two -Way Left Turn Lane
Number of Structures	1
Anticipated Environmental Document	CEQA IS/MND and NEPA CE

BACKGROUND

This 12-mile segment of Riego Road/Baseline Road between SR-99 and Foothill Boulevard includes three local jurisdictions – County of Sutter, County of Placer and the City of Roseville (in the County of Placer). The border between Sutter County and Placer County is Pleasant Grove Road North and Pleasant Grove South. Riego Road is the portion in Sutter County and Baseline Road is the portion in Placer County.

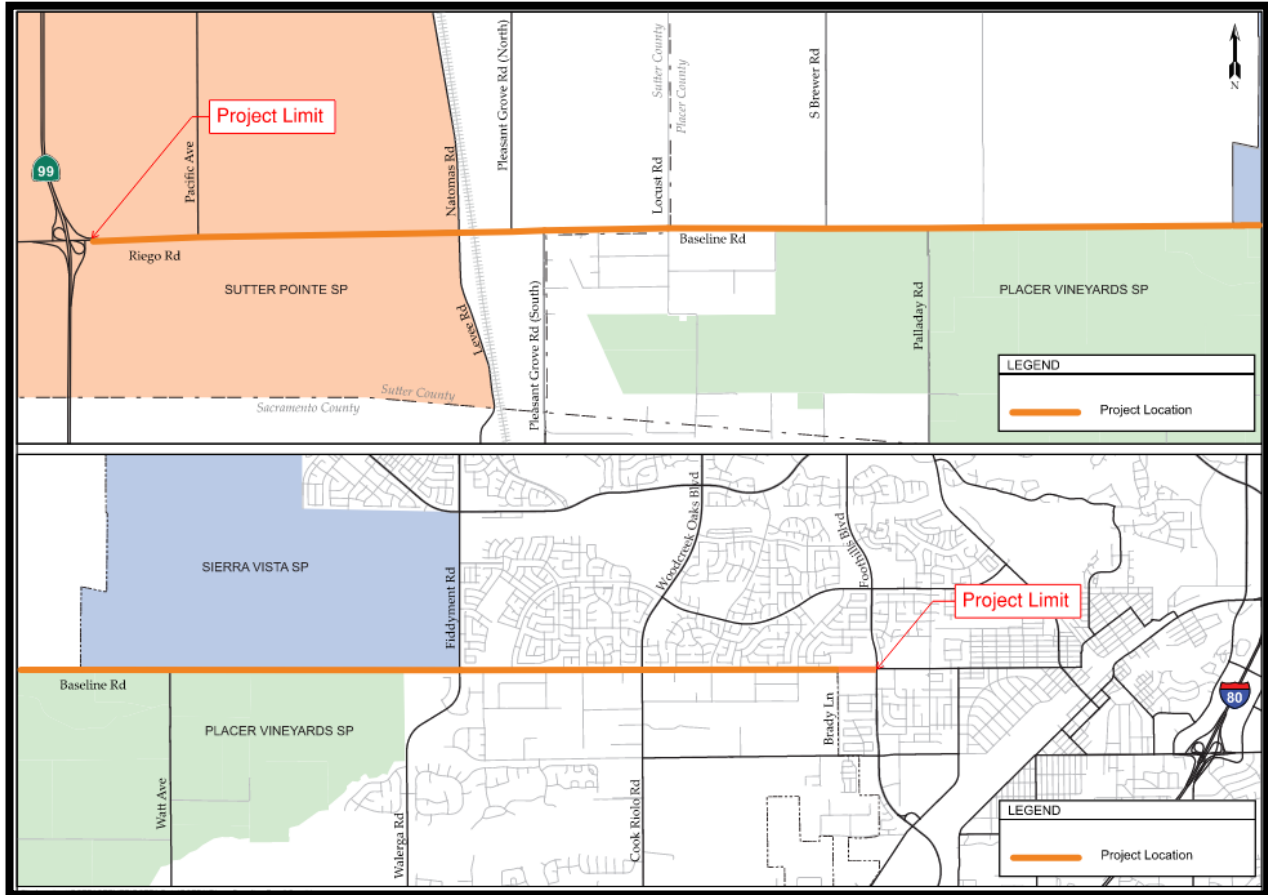


Figure 1: Project location map.

This project is developer driven. Each local jurisdiction has a specific plan along Riego Road/Baseline Road: Lakeside at Sutter Pointe, Placer Vineyards and Sierra Vista are in unincorporated Sutter County, unincorporated Placer County and City of Roseville, respectively.

Lakeside at Sutter Pointe Specific Plan (SPSP) in Sutter County was adopted by the Board of Supervisors in 2009 and amended in 2014. Riego Road is the major east-west corridor in the master-planned mixed-use development that provides direct access to SR-99/70. Both the West and East Activity Centers, or commercial districts, are centered on Riego Road, as well as the Mid Riego Neighborhood Center. High and medium density residential housing is also planned along both sides of Riego Road.

RIEGO ROAD/BASELINE ROAD WIDENING OCTOBER 2020

Placer Vineyards Specific Plan (PVSP) is in Placer County on the south side of Baseline Road was adopted in 2007 and amended in 2012 and 2015. Baseline Road is the main east-west thoroughfare street along the northern boundary of the specific plan area. Schools and public facilities back-up to Baseline Road without direct access to Baseline Road.

Sierra Vista Specific Plan (SVSP) is within the City of Roseville on the north side of Baseline Road. The specific plan was adopted in 2010 and amended in 2012. Baseline Road is the southern perimeter of the plan area and is noted as providing connection to the City of Roseville and Highway 99/Interstate 5. Baseline Road is lined with a majority of the plan area's commercial land use.

Between SPSP and PVSP (between Natomas Road and Pleasant Grove Road), the road bridges over Steelhead Creek (also known as the Natomas East Main Drain) and crosses Union Pacific Railroad (UPRR) tracks. A grade separation is envisioned as the ultimate railroad crossing; however, a widening of the existing at-grade crossing is included in the interim 4-lane road. Coordination will also be required with UPRR and the California Public Utilities Commission (CPUC). PG&E recently constructed a natural gas line on the north side of the road that must be accommodated to remain in place.

The developers have begun design within their property frontage and have received approvals on various sections from Placer County and City of Roseville. In order to have a cohesive and coordinated 4-lane arterial that can be widened for a future 6-lane roadway, it is imperative that that preconstruction phases be completed as soon as possible to make the project eligible for federal and state funds.

PURPOSE AND NEED

The purpose of the Project is to:

- Improve mobility consistent with the goals of PCTPA's 2040 Regional Transportation Plan and SACOG's Metropolitan Transportation Plan/Sustainable Communities Strategy.
- Transform current Riego Road and Baseline Road into a complete street by adding bicycle facilities throughout and accommodating pedestrian improvements.
- Provide an important connection to Sacramento International Airport from South Placer County. Support efficient movement of goods and services.
- Connect the South Placer jobs center with emerging residential areas in unincorporated Sutter, Sacramento, and Placer Counties.
- Provide needed roadway expansion to support pending and approved developments along Riego Road and Baseline Road.

The need of the Project is to address the following concerns:

- Riego Road/Baseline Road requires a coordinated multi-modal planning approach to identify and implement local and regional transportation improvements.
- Traffic congestion on existing Riego Road/Baseline Road will continue to worsen due to population growth and projected traffic volume increases.
- Efficient freight and services movement becomes increasingly constrained as travel times increases on existing designated truck route.

PCTPA initiated the Project in response to the need for coordinated roadway improvements to accommodate additional vehicular volumes based on planned growth within the corridor.

TRAFFIC ENGINEERING EVALUATION

A Traffic Engineering Performance Assessment (TEPA) was prepared to provide a technical foundation for subsequent traffic analyses for the Project. The report uses readily available information only.

Level of service (LOS) is reported for roadway segments and intersections throughout the study corridor. LOS is a qualitative measure of traffic operating conditions that utilizes a letter rating system, from A (the best) to F (the worst), is assigned. The rating for roadway segments is based on the calculated traffic volume to capacity ratio (V/C); intersections are rated based on seconds of delay. These ratings represent the perspective of drivers and are an indication of the comfort and convenience associated with driving.

Existing Deficiencies

Each jurisdiction, Sutter County, Placer County and the City of Roseville, has different thresholds of significance, measured by LOS. Existing roadway volumes, LOS and LOS standards are provided in Table 2 below. Based on current traffic volumes, the road segment of Baseline Road from Watt Ave to Fiddymment Road/Walerga Road is at an unacceptable LOS F.

Table 2: Roadway Segment Daily Volumes and Operations – Existing Conditions						
Jurisdiction	Roadway Segment	Existing Conditions				
		LOS Standard	Lanes	Classification ¹	ADT	LOS / V/C Ratio
Sutter County	Riego Road – SR 99 to Locust Road	D	2	2R	11,300	D / 0.54
Placer County	Baseline Road – Locust Road to Watt Ave	C	2	2M	13,100	C / 0.73
	Baseline Road – Watt Avenue to Fiddymment Road / Walerga Road	C	2	2M	19,700	F / 1.09
City of Roseville	Baseline Road – Fiddymment Road / Walerga Road to Woodcreek Oaks Boulevard	- ²	3	Arterial	13,800	- ²
	Baseline Road Woodcreek Oaks Boulevard to Foothills Boulevard	- ²	3	Arterial	17,900	- ²

Notes:

¹ Based on ADT LOS thresholds for given roadway classification

² City of Roseville does not apply a daily LOS threshold to its roadways. Note that portion of roadway on the south side is within unincorporated Placer County.

ADT = average daily traffic; LOS = level of service;

Shaded cells indicate exceedance of General Plan LOS policy.

Source: Fehr & Peers, 2020.

Based on existing configurations, signal timing and traffic volumes, LOS was also calculated at twelve existing intersections. Table 3 shows the existing delay and LOS for AM and PM peak hours at these twelve intersections. As can be seen in Table 3, two intersections currently operate at an unacceptable LOS.

Table 3: Intersection Level of Service – Existing Conditions								
#	Agency	Intersection	Traffic Control	LOS Standard	AM Peak Hour		PM Peak Hour	
					Delay	LOS	Delay	LOS
1	Caltrans	Riego Rd./SR 99 SB Ramps	Signal	D	8	A	7	A
2		Riego Rd./SR 99 NB Ramps	Signal	D	4	A	7	A
3	Sutter County	Riego Rd./Pacific Ave.	Side-Street Stop	D	1 (15)	A (C)	2 (16)	A (C)
4		Riego Rd./Natomas Rd.	All-Way Stop	D	23	C	23	C
5		Riego Rd./Pleasant Grove Rd. (N)	All-Way Stop	D	22	C	17	C
6		Riego Rd./Pleasant Grove Rd. (S)	All-Way Stop	D	49	E	32	D
7	Placer County	Baseline Rd./Locust Rd.	All-Way Stop	C	64	F	34	D
8		Baseline Rd./Watt Ave.	Signal	C	16	B	28	C
9	City of Roseville	Baseline Rd./Fiddymnt Rd.	Signal	C ¹	34	C	58	E
10		Baseline Rd./Woodcreek Oaks Blvd.	Signal	C ¹	30	C	27	C
11		Baseline Rd./Junction Blvd.	Signal	C ¹	12	B	11	B
12		Baseline Rd./Main St./Foothills Blvd.	Signal	C ¹	35	C	37	D

Notes:

¹ The City of Roseville 2020 General Plan contains the following policy:

“Maintain a LOS “C” standard at a minimum of 70 percent of all signalized intersections and roadway segments in the City during the a.m. and p.m. peak hours. Exceptions to the LOS “C” standard may be considered where improvements required to achieve the standard would adversely affect pedestrian, bicycle, or transit access, and where feasible LOS improvements and travel demand-reducing strategies have been exhausted.”

Shaded cells indicate unacceptable operations.

Source: Fehr & Peers, 2020.

Additional considerations for the future traffic analysis need to include the at-grade railroad crossing between Natomas Road and Pleasant Grove Road and the roads designation as an STAA route for trucks.

Findings

A preliminary assessment, using only readily available information, of design year (2040) operating conditions with the Build Alternative is provided in the report. A review of specific plans and general plans along the corridor conclude that 20 signalized intersections will be added to the existing 5 signalized intersections by the design year.

Design year ADT (Average Daily Traffic) and resulting LOS for the roadway segments along the study corridor are forecast in Table 4.

Table 4: Roadway Segment Daily Volumes and Operations – Design Year Conditions						
Jurisdiction	Roadway Segment	Design Year Conditions ¹		Classification ²	ADT	LOS / V/C Ratio ²
		Sutter County	Riego Road – SR 99 to Locust Road	LOS Standard	Lanes	4E
Placer County	Baseline Road – Locust Road to Watt Ave / Santucci Boulevard	C / E ³	4	4H	35,400	D / 0.87
	Baseline Road – Watt Avenue / Santucci Boulevard to Fiddymment Road / Walerga Road	- ⁴	4	Arterial	34,600	- ⁴
City of Roseville	Baseline Road – Fiddymment Road / Walerga Road to Woodcreek Oaks Boulevard	- ⁴	4	Arterial	35,000	- ⁴
	Baseline Road – Woodcreek Oaks Boulevard to Foothills Boulevard	- ⁴	4	Arterial	35,100	- ⁴

Notes:

¹ Refer to prior pages for traffic forecasting methodologies used to develop design year forecasts.

² Based on ADT, LOS thresholds for given roadway classification.

³ Portion of this corridor is within/adjacent to the Placer Vineyards Specific Plan that permits LOS E; west of that plan, LOS C is allowed.

⁴ City of Roseville does not apply a daily LOS threshold to its roadways. Under design year conditions, development of the Sierra Vista Specific Plan on the north side of Baseline Road continuously from Fiddymment Road to Watt Avenue assumed to result in primary responsibility for operations to be with the City of Roseville.

ADT = average daily traffic; LOS = level of service;

Shaded cells indicate exceedance of General Plan LOS policy.

Source of traffic forecasts: Figure 22 of the *Sunset Area Plan and Placer Ranch Specific Plan Final Transportation Impact Study (Fehr & Peers, 2018)* for City of Roseville and Placer County facilities. For Sutter County facilities, source of forecasts is ongoing work being performed by Fehr & Peers for developments in that area.

Design year intersection operations for the twelve study intersections are shown in Table 5.

Table 5: Intersection Level of Service – Design Year Conditions								
#	Agency	Intersection	Traffic Control	LOS Standard	AM Peak Hour		PM Peak Hour	
					Delay	LOS	Delay	LOS
1	Caltrans	Riego Rd./SR 99 SB Ramps	Signal	D	10	A	8	A
2		Riego Rd./SR 99 NB Ramps	Signal	D	4	A	10	B
3	Sutter County	Riego Rd./Pacific Ave.	Signal	D	14	B	16	B
4		Riego Rd./Natomas Rd.	Signal	D	18	B	20	C
5		Riego Rd./Pleasant Grove Rd. (N)	Signal	D	9	A	10	A
6		Riego Rd./Pleasant Grove Rd. (S)	Signal	D	29	C	42	D
7	Placer County	Baseline Rd./Locust Rd.	Signal	C	11	B	14	B
8								

Table 5: Intersection Level of Service – Design Year Conditions

#	Agency	Intersection	Traffic Control	LOS Standard	AM Peak Hour		PM Peak Hour	
					Delay	LOS	Delay	LOS
9	City of Roseville	Baseline Rd./Watt Ave.	Signal	C ¹	36	D	52	D
		Baseline Rd./Fiddymnt Rd.	Signal	C ¹	57	E	66	E
Baseline Rd./Woodcreek Oaks Blvd.		Signal	C ¹	108	F	133	F	
10		Baseline Rd./Junction Blvd.	Signal	C ¹	17	B	17	B
11		Baseline Rd./Main St./Foothills Blvd.	Signal	C ¹	56	E	43	D
12								

Notes:

¹ The City of Roseville 2020 General Plan contains the following policy:

“Maintain a LOS “C” standard at a minimum of 70 percent of all signalized intersections and roadway segments in the City during the a.m. and p.m. peak hours. Exceptions to the LOS “C” standard may be considered where improvements required to achieve the standard would adversely affect pedestrian, bicycle, or transit access, and where feasible LOS improvements and travel demand-reducing strategies have been exhausted.”

Source of traffic analysis results: Table 53 of the *Sunset Area Plan and Placer Ranch Specific Plan Final Transportation Impact Study (Fehr & Peers, 2018)* for Placer County facilities. For City of Roseville facilities, results are based on 2020 General Plan transportation analysis for 2035 (Constrained) conditions. For Sutter County facilities, source of results is ongoing work performed by Fehr & Peers for developments in that area. Note that results above do not assume any mitigation for impacted facilities.

Recommendations for Project Approval and Environmental Document (PA&ED)

Based on available information, the Project's Transportation Analysis Report recommends the following evaluations occur during the PA&ED phase:

1. Develop cohesive design year traffic forecasts for No Build and Build Alternative conditions.
2. Forecasts should be developed using highly detailed traffic analysis zones (TAZ) land use assignments.
3. Traffic operations should be studied using micro-simulation, such as SimTraffic or Vissim, along the entire corridor.
4. Intersection Control Evaluations should be considered if intersections are not predetermined.
5. Ultimate UPRR Grade Separation, signal interconnect, rapid bus transit should be considered in traffic operations.

CORRIDOR AND SYSTEM COORDINATION

General Plans and Specific Plans

In the City of Roseville General Plan adopted in 2016, Baseline Road is identified as a major arterial serving the Northwest Roseville Specific Plan, North Roseville Specific Plan and the Sierra Vista Specific Plan. As described, Baseline Road is an important element of local and regional transportation circulation in the northwestern area of the City. Baseline Road also serves as a designated truck route which is an important component connecting Sacramento County to the City. It also has access to SR 99 via Riego Road which provides connectivity to northern counties.

In the Placer County General Plan updated in 2013 and the Dry Creek/West Placer Community Plan adopted in 1990, Baseline Road is identified as a thoroughfare with significant importance to land use and transportation circulation in the South Placer County area. Baseline Road also serves as a designated truck route which is an important component connecting Sacramento County to the County. It also has access to SR 99 via Riego Road which provides connectivity to northern counties.

In the Sutter County General Plan adopted in 2011, Riego Road is an important arterial for the build out of the south part of the County and into Placer County and Sacramento County. Riego Road is an integral roadway for the Lakeside at Sutter Pointe Specific Plan. Riego Road also serves as a designated truck route which is an important component connecting Sacramento County and other counties to the City of Roseville and Placer County.

Multi-Modal Elements

Within the Baseline Road corridor, transit is planned in the future along Watt Avenue. As population and employment in Placer County increase, transit use may become more appealing.

Pedestrian and bicyclist are emphasized in the transportation and circulation elements within the Sutter County, Placer County and City of Roseville General Plans. Pedestrian and bicycle facilities are active within the City of Roseville and portions of Placer County. One of the goals of the Dry Creek/West Placer Community Plan is to accommodate pedestrian and bicycle access and connectivity to regional trails.

Future development projects such as Lakeside at Sutter Pointe, Placer Vineyards and Sierra Vista include pedestrian and bicycle facilities. As development increases, this will help maintain a better balanced transportation system with choice of modes. Smart growth land use concepts are incorporated within the specific plans approved by Sutter County, Placer County and City of Roseville.

The Traffic Engineering Performance Assessment recommended consideration of the ultimate UPRR Grade Separation, signal interconnect and bus rapid transit for corridor coordination.

ALTERNATIVES

No-Build Alternative

The No-Build Alternative does not provide additional capacity or multi-modal infrastructure.

This alternative will not meet the Purpose and Need of the Project.

Build Alternative 1

Widen Riego Road/Baseline Road to four 11-foot lanes with a 14-foot wide two-way left turn lane, 6-foot bike lanes and roadside ditches on both sides. The existing UPRR at-grade crossing will be widened. It is anticipated that the existing bridge over Steelhead Creek will be replaced with a wider structure.

More specifically, Riego Road is widened to the north from SR-99, across the SPSP plan area and the railroad tracks, to Newton Road (Alternative 1, Typical Section #1, #2, RR and #3). The alignment transitions from Newton Road to Brewer Road with widening on both the north and south sides (Alternative 1, Typical Section #4) through the PVSP. From Brewer Road to Sierra Vista (west boundary), the widening is to the south of the existing road (Alternative 1, Typical Section #5). The road shifts back to widening on both the north and south sides of the existing street along both frontages of PVSP and SVSP (Alternative 1, Typical Section #6) to Fiddymment Road/Walerga Road. From Fiddymment Road/Walerga Road to Brady Road, the roadway transitions to conform to the existing curb and gutter on the north side and widens to the south side (Alternative 1, Typical Section #7).

The specific intersections included in this PSR are based on the latest available information from builders representing Placer Vineyards, Sierra Vista, and Lakeside at Sutter Pointe. When the project moves into the environmental phase, the intersections to be included as part of the project improvements/footprint/construction will need to be reconfirmed with project stakeholders.

Build Alternative 2

Alternative 2 is the same roadway as Alternative 1 and adds a 12-foot multi-use path. The multi-use path runs along the north side of the road from SR-99 to Locust Road (Alternative 2, Typical Sections #1, #2, and RR). At Locust Road, the multi-use path crosses over to the south side and continues to Fiddymment Road/Walerga Road (Alternative 2, Typical Sections #3, #4, #5 and #6). At Fiddymment Road/Walerga Road, it crosses back to conform to the existing 8-foot meandering multi-use path on the north (Alternative 2, Typical Section #7).

Alternative 2 also includes landscaping within the multi-use path. The landscape concept is based on planting shade trees and adding mulch with an irrigation system along the path.

GRADE SEPARATION

In the separate “Riego Road Grade Separation Feasibility Study”, three different railroad crossings for Riego Road at the Union Pacific Railroad (UPRR) railroad in South Sutter County are analyzed to determine a preferred alternative. Due to their close proximity to the railroad, the canal crossing at Steelhead Creek, the stop-controlled intersection of Riego Road and Natomas Road and Riego Road/Pleasant Grove Road (North) intersection are also included in this study.

The existing at-grade crossing is identified as California Public Utilities Commission (CPUC) Crossing Number 004-150.90 and US Department of Transportation (USDOT) Crossing Number 833698J and is located along the UPRR Sacramento Subdivision. Per the Federal Railroad Administration (FRA) Inventory Report for this crossing (USDOT #833698J), there are 10 daily trains that operate through the study area.

The preferred alternative due to funding limitations would be to construct a 4-lane at-grade crossing at the interim phase of the Riego Road/Baseline Road (interim) widening project.

The Grade Separation Feasibility Study evaluates 3 Build alternatives for the UPRR Crossing:

- Alternative 1 (UPRR Crossing) - a four-lane at-grade crossing (interim),
- Alternative 2a (UPRR Crossing) - a four-lane grade separation (interim),
- Alternative 2b UPRR Crossing) - a six-lane grade separation (widen from four lane grade separated crossing to ultimate six lane)) and
- Alternative 3 (UPRR Crossing) - a six-lane grade separation (construct ultimate six lane grade separated crossing from interim at grade four lane crossing).

The total project costs in the grade separation feasibility study represent comparison costs for an independent project, which include overlapping roadway costs to the Riego Road/Baseline Road (interim) widening project. The Riego Road/Baseline Road (interim) widening project anticipates that an at-grade crossing will be constructed at the interim phase.

Alternative 1 (UPRR Crossing): The existing at-grade crossing (interim) with the UPRR tracks will be reconfigured to the new roadway configuration and include the required crossing safety equipment. Natomas Road will maintain its connection to Riego Road; however, it will be changed to a right-in, right-out only configuration. The intersection of Riego Road and Pleasant Grove Road (North) will be signalized.

The construction cost for the at-grade crossing (interim) is included in the Riego Road/Baseline Road (interim) widening project.

Alternative 2a (UPRR Crossing): If the at-grade crossing (interim) is not approved by UPRR/CPUC, Riego Road will bridge over the railroad, the canal and Natomas Road. Natomas Road pass under Riego Road (no longer connecting directly to Riego Road) and end in a cul-de-sac to maintain connectivity to two parcels and access to the railroad corridor and PG&E gas line. A new local road will connect Natomas Road to Riego Road to the east of the existing intersection. The intersection of Riego Road and Pleasant Grove Road (North) will be signalized. This alternative requires two bridge structures and retaining walls for Riego Road and 1 bridge for the local road connection.

The construction cost of the structures is \$34.0M; the roadway construction cost estimate is an additional \$10.9M. The estimated total project cost is \$62.1M.

Alternative 2b (UPRR Crossing): The Riego Road bridge over the railroad, the canal and Natomas Road in Alternative 2a will be widened to 6 lanes. This alternative assumes that the a 4-lane grade separation

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(interim) is constructed with the Riego Road/Baseline Road (interim) widening project, then widened to 6 lanes (ultimate).

The construction cost of the structures is \$18.1M; the roadway construction cost estimate is an additional \$4.8M. The estimated total project cost is \$36.8M over the project cost for Alternative 2A.

Alternative 3 (UPRR Crossing): Riego Road will have the same configuration as Alternative 2 but with the 6-lane Riego Road cross section (ultimate).

The construction cost of the structures is \$43.3M; the roadway construction cost estimate is an additional \$12.7M. The estimated total project cost is \$77.5M.

Construction of an improved widened at-grade crossing or a new overhead structure will require coordination with and approval by UPRR and CPUC. A construction and maintenance agreement with UPRR will also be required. Per initial discussions with the CPUC on August 4, 2020, a grade separation would be preferred but an improved widened at-grade crossing is feasible if aggregable to all parties. The CPUC believes this crossing improvement would qualify under the GO 88-B Modification to an Existing Crossing process instead of the Formal Application process.

For the grade separation, it is anticipated that Sutter County and the other sponsoring agencies for the Riego Road/Baseline Road widening (PCTPA, County of Placer, and City of Roseville) will pursue funding from the Railroad Highway Grade Crossing Program (RHGCP).

Recommendations:

1. Sutter County submit an application for funding (GSN-1 form) to the Public Utilities Commission to nominate the project for Separation of Existing At-Grade Crossing. The project will then be placed on a list for funding when the final design (PS&E) is complete. The call for projects occurs every two years, with the next call for projects in July 2021 and due in October 2021. Since the application cannot be submitted until the railroad agreement is fully executed, the next opportunity to submit the project will be in 2023.
2. Sutter County should submit an Initiation Letter to UPRR as soon as possible in order to open a project with UPRR to discuss the at grade crossing.

Section 190 Grade Separation Funds - The state of California Section 190 Grade Separation Program is a state funding program to grade separate crossings between roadways and railroad tracks. The program typically provides approximately \$15 million distributed among 3 or 4 projects each fiscal year. Grade-separated crossings can replace existing at-grade crossings thereby eliminating potential conflict between trains and highway users. The California Public Utilities Commission (CPUC or Commission) has jurisdiction over the safety of highway-rail crossings in California. The Section 190 Grade Separation Program helps local agencies finance the high costs of grade separating highway-rail crossings, thereby improving public safety and convenience throughout California. In 2018, the CPUC awarded all \$15M to three grade separation projects along the Alameda freight corridor in the Los Angeles / Long Beach area.

DESIGN CRITERIA

The governing design standards for the horizontal and vertical roadway alignment are the Sutter County standards, Caltrans Highway Design Manual, AASHTO Policy of Geometric Design of Highways and Streets, Code of Federal Regulations and the Union Pacific Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects. All alternatives comply with Americans with Disabilities Act (ADA) requirements. The specific design parameters incorporated into this alternative analysis include the following:

- Design Speed

Expressway (Riego Road)	V = 65 mph
Local Collector Road	V = 45 mph

- Horizontal Alignment

Transition & Curves	Caltrans minimum requirement for design speed
Sight Distance	Caltrans minimum corner sight distance

- Vertical Alignment

Crest Curves	AASHTO Stopping Sight Distance
Sag Curves	AASHTO Comfortable Speed for Well-Lit Roadways

- Vertical Clearance

Roadway	16'-0"
Railroad	23'-4" minimum (measured from the top of the highest rail to the lowest obstruction under the structure). Railroad is owned and maintained by UPRR

- Cross-Section

Riego Road (Interim)	77' section across bridge (64' for travel width + 13' for path) 4' median, 11' lanes, 6' shoulders Two lanes each direction with 12' multi-use path on north side.
Riego Road (Ultimate)	107' section across bridge (94' for travel width + 13' for path) 4' median, 11' lanes, 6' shoulders, 5' sidewalks Three lanes each direction with 12' multi-use path on north side

Each agency has slightly varying requirements for lane widths; modifications are proposed to conform to existing built conditions and existing approved developer plans where necessary, including:

- Two-way left turn lane narrowed to 11' wide, bike lane narrowed to 5' + 3' hinge (north side) and 4.5' + HMA dike+ 2' hinge (south side) at the Sierra Vista (west boundary) to Fiddymint Road/Walerga Road
- Bike lane narrowed to 4' + 3' curb and gutter (north side) and 5' + variable hinge (south side) at Fiddymint Road/Walerga Road to Brady Lane (two-way left turn lane widened back to 14')

UTILITIES AND DRAINAGE

There are variety of existing utilities that conflict with the proposed improvements. These include joint overhead poles, underground fiber optic, underground oil pipeline, irrigation canals, irrigation pipelines, pumps and distribution boxes, pedestals, meter and boxes. The recently constructed Pacific Gas and Electric (PG&E) 30" natural gas transmission line that runs longitudinally under the north side of the road will remain in place. All other existing utilities in conflict with the Project will need to be relocated. Other known utilities in the area include AT&T, California American Water, Level 3, Natomas Mutual Water Company, Reclamation District 1000, Sprint, and Verizon.

There is a PG&E substation on the north side of Baseline Road approximately 4000' east of Fiddyment Road. This PG&E parcel is affected by the project as shown in the impact maps. The value for the land and fencing is included in the right of way costs with the assumption that a land swap will take place with the adjacent owner to make the parcel whole. However, impacts to the PG&E facilities are unknown currently. PG&E and CPUC will have to approve any arrangements required for these facilities.

Due to the rural setting of most of the facility and the lack of natural water courses in the general project area, there are no formal storm water facilities within the project limits that intercept, convey, and discharge to a downstream water feature. Most on-site runoff flows into vegetated roadside ditches and shallow swales, or sheet flows off the crowned roadway directly onto adjacent parcels. Storm water runoff is planned to be collected via side ditches and swales within the road right of way and conveyed to an existing storm water facility or retention basin if needed. Along specific plan developments where proposed drainage systems are adequate, storm water runoff may be accepted via side ditches, swales, dike, drainage inlets, or pipes. Depending on the specific plan improvement assumptions, the Riego Road/Baseline Road widening project may encounter minor incremental cost if it exceeds the runoff anticipated in the specific plan improvements. Existing water courses will be perpetuated through culverts crossing the facility at various locations.

RIGHT OF WAY

Right of Way acquisitions to construct the Project are anticipated. The alignment of the build alternatives has been selected to maximize the use of developer-conditioned right of way dedication to minimize project costs. These parcels were excluded from the assessment of right of way impacts. No temporary access easements, utility relocations or relocation assistance is included in the planning level acquisition estimations shown below. A PG&E parcel is impacted by the project; a possible land swap with an adjacent owner to make the parcel whole will be reviewed at subsequent design phases. A value for land and fencing has been included but impacts to the facilities are unknown and not included in the estimations shown below. The UPRR crossing is also affected by the project, but no value was added to the right of way estimates shown below. These planning estimates will be refined in subsequent PA&ED and PS&E phases. Both impacts require approval of the California Public Utilities Commission (CPUC).

The Right of Way Impacts for Alternative 1 are as follows:

- No full takes
- 22 partial takes on agricultural lands
- 62 partial takes on residential lands
- 1 partial take on commercial lands
- 12 partial takes unincorporated Sutter County
- 73 partial takes in unincorporated Placer County

Total costs, including a 20% contingency, are \$2,228,000

- Acquisition costs total \$695,000
- Improvement costs are valued at \$1,162,000
- Contingency is \$371,000

The Right of Way Impacts for Alternative 2 are from the same 82 parcels as Alternative 1 above. These costs are higher than Alternative 1 due to the additional right of way required to construct the multi-use path.

Total costs, including a 20% contingency, are \$2,655,000

- Acquisition costs total \$754,000
- Improvement costs are valued at \$1,458,000
- Contingency is \$443,000

As indicated above, utility relocations and adjustments are anticipated for existing electric and railroad facilities however are not included in the right of way estimates. Other relocations may include existing storm drains, water, telephone, cable and canals. During the design for the interim phase, the relocation process will consider the ultimate widening for this corridor to eliminate multiple relocations for various facilities and additional stakeholders. An additional \$7.0M was added to the right of way capital costs for both alternatives to account for utility relocations, UPRR requirements and additional easements.

STAKEHOLDER INVOLVEMENT

The major stakeholders in the Project are PCTPA, Sutter County, Placer County, City of Roseville, various builders of the three specific plans, UPRR and PG&E.

Stakeholder input during the development of this PSR included a Project Development Team and a Strategy Team.

The Project Development Team, consisted of PCTPA, Sutter County, Placer County, and City of Roseville, has reviewed and provided input in the development of the project conceptual alternatives.

The Strategy Team, consisted of PCTPA, Sutter County, Placer County, City of Roseville, and builders for Lakeside at Sutter Pointe Specific Plan, Placer Vineyards Specific Plan and Sierra Vista Specific Plan. The strategy team's role was to review and concur with the project conceptual alternatives.

Because the corridor has been subject to development pressures for some time, stakeholder engagement and community participation have been a part of the process. In 2004, the City of Roseville's Growth Management Visioning Committee (GMVC) was formed to understand the potential traffic and environmental impacts due to planned growth up to the year 2025 extensive public involvement and focused meetings were conducted by the GMVC. With public input, the GMVC's report and recommendations to implement growth management vision were approved by City Council in 2005.

Public Outreach has also been part of the specific plan approval process within the City of Roseville and Sutter County and Placer County. For all three specific plans, Lakeside at Sutter Pointe Specific Plan, Placer Vineyards Specific Plan and Sierra Vista Specific Plan, public meetings were held to provide information and progress to the agencies and public with opportunity to solicit input. Public hearings were also held for each specific plan allowing agency and public input.

In addition, the City of Roseville and Placer County conducted public outreach for the traffic mitigation fee program. Presentations were conducted at the Roseville Development Advisory Committee (DAC) and the North State Building Industry Association (NorCal BIA) meetings in February 2013. A public hearing was held at the Roseville City Council in June 2013.

Lastly, the PCTPA Funding Strategy for Riego Road/Baseline Road conducted in 2016 and 2020 included public outreach. Public outreach will also be conducted during the PA&ED phase.

ENVIRONMENTAL COMPLIANCE

An environmental technical memo was developed to provide a high-level analysis of potential environmental resource issues, level of environmental document required, likely permits/agreements and permitting costs associated with the design concept and scope of the project alternatives.

Most of the project area has been previously evaluated and permitted as part of the four specific plan areas and the gas pipeline project. PCTPA could rely upon the technical studies, potential effects, and mitigation measures identified in their environmental documents. Coordination with the City of Roseville, Placer County, Sutter County and the U.S. Army Corps of Engineers will be necessary to obtain technical studies and permitting information. However, there are areas along the corridor that have not been previously studied that will likely require field studies and analyses.

The mapped resources most likely to be impacted by the Project are: agricultural (prime or important farmlands and lands with Williamson Act contracts), biological (giant garter snake, Central Valley steelhead, vernal pool fairy shrimp, vernal pool tadpole shrimp, burrowing owl, Swainson's hawk, black-crowned night heron, tricolored blackbird, western spadefoot white-tailed kite, California linderiella, andrenid bee, and some vernal pool plant species) and cultural and tribal. Additional environmental factors of "moderate" constraint level are traffic/transportation, hydrology and water quality, air quality, noise and vibration and energy and climate change. It is anticipated that the following studies will be required: Community Impact Assessment, AD-1066 Form (for impacts to farmland and consultation with the Natural Resources Conservation Service), Visual Impact Assessment, Historic Property Survey Report (HPSR), Archeological Survey Report (ASR), Historic Resources Evaluation Report (HRER), Water Quality Assessment Report (WQAR), Geotechnical Report, Paleontological Evaluation Report (PER), Initial Site Assessment (ISA), Air Quality Assessment Report, Noise Study Report (NSR), Natural Environment Study (NES), Aquatic Resource Delineation Report, (ARDR) and two Biological Assessments (BA) (one for vernal pool fairy shrimp and the other for steelhead and giant garter snake). There is a low risk that Extended Phase I (XPI) surveys and Findings of Effect (FOE) will be needed if archeological resources are located within the Area of Potential Effect (APE) or historic resources are within the project area.

A Preliminary Environmental Assessment Report (PEAR) will be completed to confirm the environmental resources requiring evaluation and level of study.

The PCTPA is hopeful that federal funds will be awarded to the Project which then requires analysis and clearance under the National Environmental Policy Act (NEPA) in addition to certification under the California Environmental Quality Act (CEQA). The anticipated level of action under NEPA is a Categorical Exclusion and an Initial Study/Mitigated Negative Declaration under CEQA.

Additionally, the necessary permits, agreements and approvals for the project include a California Fish and Game Code Lake or Streambed Alteration Agreement, U.S. Army Corps Clean Water Act (CWA) Section 401 (Water Quality Certification), CWA Section 402 (NPDES) permits from the Regional Water Quality Board, CWA Section 404 (Nationwide Permit or Individual Permit), Rivers and Harbors Act Section 14 – Title 33 USC Section 408 Authorization (for crossing levee along Steelhead Creek), Federal Endangered Species Act Biological Opinion(s), California Endangered Species Act 2081 Agreement and National Historic Preservation Act Section 106 State Historic Preservation Office (SHPO) Concurrence. Permits will need to be initiated concurrently with the environmental document to meet the project's construction schedule.

COST ESTIMATE/FUNDING

As part of the PSR Equivalent process, a planning level, but detailed, cost estimates have been developed. These planning estimates will be refined in subsequent PA&ED and PS&E phases, including right of way and utility costs. Estimated cost for Alternative 1 is \$122M and Alternative 2 is \$136M.

Phase	Alt 1	Alt 2
Construction	\$64,980,000	\$72,420,000
Contingency (20%)	\$13,000,000	\$14,490,000
Construction costs 2020 subtotal	\$77,980,000	\$86,910,000
Construction costs 2023 (4%/year escalation)	\$87,730,000	\$97,780,000
Environmental Mitigation (3%)	\$2,530,500	\$2,820,500
ROW Cost (Incl. RR items and Utilities)	\$9,228,000	\$10,075,000
Construction Mgmt. (8%)	\$6,748,000	\$7,520,800
Construction Support (2%)	\$1,687,000	\$1,880,200
ROW Support (82 properties)	\$1,425,000	\$1,425,000
PA&ED (5%)	\$4,217,500	\$4,700,500
PS&E (6%)	\$5,061,000	\$5,640,600
Agency Oversight (4%)	\$3,374,000	\$3,760,400
Total=	\$122,010,000	\$135,610,000

The breakdown for the above cost estimate can be found as Attachment D. The capital cost estimates shown above do not include quantifiable costs for unknown right of way easements, PG&E substation impacts, environmental mitigation and local impacted roadways. However, an additional \$7.0M was added to the right of way capital costs for both alternatives to account for utility relocations, UPRR requirements and additional easements, and 3% of the construction costs has been added for environmental mitigation.

SACOG Regional/Local Funding Programs, STP, ATP, INFRA, and BUILD Grants have been identified as potential funding source(s) for the project.

DELIVERY SCHEDULE

As part of the PSR Equivalent process, a schedule of major project milestones has been developed.

Project Milestones	Scheduled Delivery Date
Final Project Study Report Equivalent	October 2020
Finalize Funding (Program Project)	Spring 2021
Environmental Process (PA&ED)	March 2022
Final Design (PS&E)	September 2022
Right of Way Process	March 2023
Begin Construction	September 2023

RISKS

The Risk Register identifies twenty-one risks. The risks are associated with being in the planning stage of the project and not having information or contact with the citizens, developers and agencies involved in the project.

The highest risks for cost and schedule for the Project, currently, are obtaining funding, UPRRs approval to widen the existing at-grade crossing, potential need to relocate a PG&E substation and CPUC approval of PG&E relinquishment. Early coordination with impacted agencies and assessment of impacts to their existing facilities is the key strategy to mitigating these risks.

There are multiple right of way risks due to unwillingness of property owners to dedicate land, unknown market changes and unknown design. Many of the risks will be clarified during the Planning phase when design is more defined and stakeholders and impacted groups are contacted.

EXTERNAL AGENCY COORDINATION

UPRR and CPUC

The UPRR crossing on Riego Road is located approximately 500 ft, east of Natomas Road Intersection. Per the Federal Railroad Administration (FRA) Inventory Report for this crossing (USDOT #833698J), there are 10 daily trains that operate through the study area. Only one accident has been recorded at this crossing in 1978 based on the most recent Highway-Rail Grade Crossing Accident/Incident Report made available by the Department of Transportation Federal Railroad Administration (FRA). There were no fatalities or injuries as a result of this incident and the property damages did not exceed \$150. The interim phase of the project is planning to implement the 4-lane at-grade crossing on the same alignment across the railroad tracks. During this phase, it is important to minimize the amount of impact within the UPRR right of way for a smooth approval process from UPRR.

Per initial conversations with UPRR, it is anticipated that other existing crossings within the PCTPA partner jurisdiction will be eliminated to “compensate” for the widening of existing 2 lane crossing.

Caltrans

Encroachment Permit

Even though the proposed improvements will conform before encroaching into the Caltrans access control, our team anticipates that when this project goes to construction, the need for temporary construction signs for traffic handling near and around the SR 99/Riego Road Interchange.

The design shall include coordination with Caltrans Local Assistance to obtain encroachment permit for the construction phase of the project.

Storm Water Coordination

There will likely be the need to coordinate with Caltrans to clearly make the distinction of State vs Local Agency storm water runoff and the best method to treat this runoff.

PG&E and CPUC

The PG&E substation on Baseline Road is impacted by the project. Impacts to the substation facilities are unknown. A possible land swap with an adjacent landowner to make the parcel whole will be reviewed in subsequent design phases. Both PG&E and CPUC will be required to approve the impacts and any mitigation of impacts.

PROJECT PERSONNEL

The key personnel involved with this phase of the project are:

<u>Name</u>	<u>Agency/Firm</u>
Luke McNeel-Caid	PCTPA
David Melko	PCTPA
Ken Grehm	Placer County
Richard Moorehead	Placer County
Neal Hay	Sutter County
Jason Shykowski	City of Roseville
Jose Silva, PE	Dewberry Drake Haglan, Consultant Project Manager (Civil)
John Gard, PE	Fehr and Peers (Traffic)
Shahira Ashkar	ICF (Environmental)
Jamie Formico	Dokken Engineering (Right of Way)
Daniel Miller	Callander Associates (Landscape)

ATTACHMENTS