

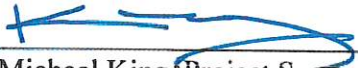
Project Study Report-Project Development Support (PSR-PDS)

To

Request Approval for a Locally Funded Project To Proceed to Project Approval and Environmental Document Phase

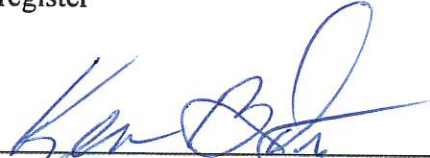
On State Route 120, In San Joaquin County, Between PM R0.5 and PM R1.8

APPROVAL RECOMMENDED:

 6-19-19

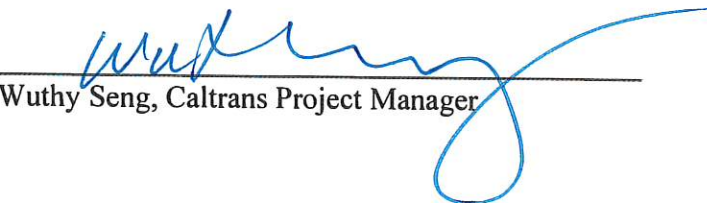
Michael King, Project Sponsor, Accepts risks
identified in this PSR-PDS and attached risk
register

APPROVAL RECOMMENDED:



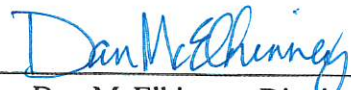
Ken Baxter, Deputy District Director,
Planning, Local Assistance, and Environmental

APPROVAL RECOMMENDED:



Wuthy Seng, Caltrans Project Manager

APPROVED:

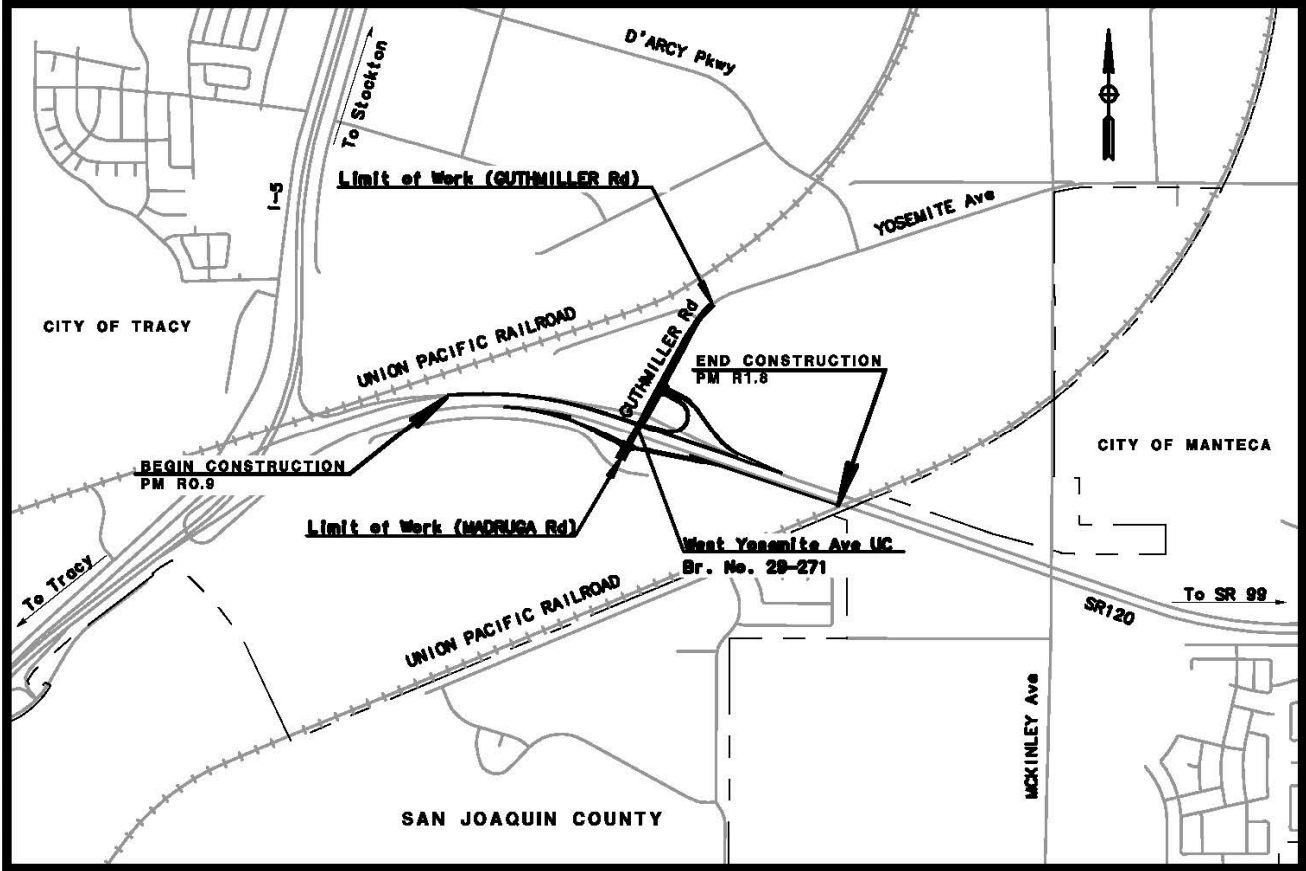


Dan McElhinney, District 10 Director

June 28, 2019

Date

Vicinity Map



This project study report-project development support 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.



REGISTERED CIVIL ENGINEER

6/18/2019

DATE



Table of Contents

1. Introduction.....	1
2. Background.....	2
3. Purpose and Need	2
4. Traffic Engineering Performance Assessment.....	3
5. Deficiencies	5
6. Corridor and System Coordination	5
7. Alternatives	6
8. Right-of-Way	9
9. Considerations Requiring Discussions	10
10. Complete Streets	10
11. Climate Change, and Greenhouse Gas (GHG)	10
12. Stakeholder Involvement	10
13. Environmental Compliance	10
14. Funding	11
15. Delivery Schedule	12
16. Risks	12
17. External Agency Coordination	12
18. Project Reviews	13
19. Project Personnel	13
20. Attachments	14
A. Location Map	19
B. Project Alternatives	21
C. Project Cost Estimates	25
D. Typical Cross Sections	56
E. Preliminary Environmental Analysis Report (PEAR)	58
F. Traffic Engineering Performance Assessment (TEPA)	78
G. Transportation Planning Scoping Information Sheet	145
H. Right of Way Conceptual Cost Estimate Component	154
I. Risk Register	156
J. Stormwater Data Report	160
K. Transportation Management Plan Checklist	184
L. SHOPP Performance Measures	187
M. South Lathrop Specific Plan (SLSP)	189

1. INTRODUCTION

Project Description:

The City of Lathrop, in cooperation with Caltrans, has initiated this Project Study Report-Project Development Support (PSR-PDS) to improve the Guthmiller Road/Yosemite Avenue and State Route 120 (SR 120/Yosemite Ave) interchange. Because the existing interchange is anticipated to have operational deficiencies with the future build-out of the South Lathrop Specific Plan (SLSP)¹ the project proposes to reconstruct westbound ramps, adding new auxiliary lanes on State Route 120 from the Yosemite Avenue interchange to the Interstate 5 (I-5) connector, and provide facilities for pedestrian and bicyclists.

The proposed improvement to the interchange has three build alternatives along with a no build alternative that will be evaluated. The total capital cost of the project will range between \$25 Million and \$37 Million.

The purpose of this PSR-PDS is to identify and estimate project scope, schedule and supports costs necessary to complete studies and work needed during the PA&ED phase.

Project Limits	10 – SJ – 120 – PM R0.5/R1.8
Number of Alternatives	4
Current Capital Outlay Support Estimate for PA&ED	\$6,350,000
Current Capital Outlay Construction Cost Range	\$25,000,000 to \$37,000,000
Current Capital Outlay Right-of-Way Cost Range	\$3,620,000 to \$14,260,000
Funding Source	Crow Holdings Industrial, Local Agency, Federal Funds
Type of Facility	Freeway – 4 Lanes
Number of Structures	1 (Bridge No. 29-271L)
Anticipated Environmental Determination or Document	CEQA – Initial Study / Mitigated Negative Declaration NEPA – EA/FONSI
Legal Description	From 0.20 Miles West of Guthmiller Road to 0.22 Miles East of State Route 120/Guthmiller Road Interchange and on Guthmiller Road from Madruga Road to 0.20 Miles
Project Development Category	3

Other studies and approvals required are:

- Structure Advance Planning Studies
- Right of Way Analysis
- Detailed Environmental Analysis

¹ South Lathrop Specific Plan, May 21, 2015:

http://www.ci.lathrop.ca.us/lathrop/cdd/projects/Pdf/_slsp_files/18-05-2017_17-40-37-310.pdf

- Cooperative Agreements
- Development of Detailed Project Alternatives (GAD's)
- Approval of Identified nonstandard design features
- Draft and Final Project Report
- Traffic Analysis and Forecasting
- Traffic Operations Analysis Report (TOAR)
- Modified Freeway Agreement (between Caltrans and the City of Lathrop)
- Freeway Maintenance Agreement (partners confirm that upon obligation completion, maintenance agreement will be necessary)
- Draft and Final Environmental Documents

2. BACKGROUND

The Yosemite Avenue/Guthmiller Road corridor is a local roadway connecting the cities of Lathrop and Manteca. This arterial extends from the SLSP area north to SR 120 then east to SR 99. The existing SR 120/Yosemite Ave interchange configuration is a tight diamond (L-1) with undercrossing structures (Bridge No. 29-271 R/L). The SR 120 ramp-terminal intersections are single lane and stop-controlled. Currently agriculture and industrial users occupy the SLSP area and the existing roadways do not provide sidewalks or bicycle lanes for alternate modes of circulation.

The SLSP proposes a development of 315-acres to include commercial offices, limited industrial facilities, public facilities, and park/open spaces. Access to the SLSP will be via SR 120/Yosemite Avenue Interchange, and an arterial from Yosemite Avenue to Guthmiller Road extending south into the SLSP Area. See Attachment M for proposed development. With the development of the SLSP, the existing intersection's forecasted level of service (LOS) will degrade to level F.

The City of Lathrop prepared the Environmental Impact Report (EIR) for SLSP identifying project impacts, providing analysis of project alternatives, and identifying project mitigation measures. This PSR-PDS builds off the EIR to determine the work and studies required to complete the Project Approval and Environmental Documentation (PA&ED) for the SR 120/Yosemite Ave interchange improvements.

This interchange is a major entry to, and exit from, the southern portion of Lathrop, which is approved for industrial and commercial development. The interchange is a key connector to the areas included in the South Lathrop Specific Plan and the Lathrop Gateway Business Park Specific Plan. This interchange also provides access to the Crossroads Industrial Park, which has been approved for approximately 20 years and is partially developed. The City of Lathrop approved the SLSP in 2015, and the Gateway SP in 2011.

The City of Lathrop will initiate the PA&ED phase after PSR-PDS approval.

3. PURPOSE AND NEED

Purpose:

The purpose of the project is to improve the existing SR 120/Yosemite Ave interchange to accommodate existing and planned traffic in Lathrop. More specifically, the purpose of this project is to:

- Improve local access to SR 120

- Improve regional mobility on SR 120
- Relieve congestion on SR 120, and local roadways during peak hour conditions.

Need:

The project is needed because traffic generated by planned and approved developments is anticipated to exceed the existing operational capacity of the interchange. The interchange is currently a compact diamond design and is anticipated to degrade to level of service (LOS) "F" (i.e., forced or breakdown flow) under existing plus project conditions.

4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT

Fehr & Peers prepared a Traffic Engineering Performance Assessment (TEPA) in support of the PSR-PDS. The proposed project would improve the existing SR 120/Yosemite Avenue interchange to address the projected volume which will be generated from the general plan buildout (residential and employment growth) in the City of Lathrop and the neighboring jurisdiction of City of Manteca and San Joaquin County.

The following tables summarize the intersection operations in the existing conditions; and the Design Year 2045 for the build Alternative 1, and No Project alternative at AM and PM peak hour conditions. The threshold used to determine the operational benefits were based on Caltrans LOS D standard.

INTERSECTION ANALYSIS – EXISTING CONDITIONS

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / Movement (sec/veh)	LOS	Delay / Movement (sec/veh)	LOS
1. SR 120 EB Ramps / Yosemite Avenue	Side-Street Stop Controlled	10.7 (EB LT)	LOS B	11.1 (EB LT)	LOS B
		4.4 (EB RT)	LOS A	6.6 (EB RT)	LOS A
		0.2 (NB TH)	LOS A	0.6 (NB TH)	LOS A
		0.3 (NB RT)	LOS A	0.1 (NB RT)	LOS A
		1.9 (SB LT)	LOS A	2.1 (SB LT)	LOS A
		1.3 (SB TH)	LOS A	1.4 (SB TH)	LOS A
		6.8 (Entire)	LOS A	7.6 (Entire)	LOS A
2. SR 120 WB Ramps / Yosemite Avenue	Side-Street Stop Controlled	12.0 (WB LT)	LOS B	6.9 (WB LT)	LOS A
		3.5 (WB RT)	LOS A	4.3 (WB RT)	LOS A
		3.9 (NB LT)	LOS A	4.7 (NB LT)	LOS A
		1.0 (NB TH)	LOS A	1.7 (NB TH)	LOS A
		1.6 (SB TH)	LOS A	1.4 (SB TH)	LOS A
		0.9 (SB RT)	LOS A	0.7 (SB RT)	LOS A
		1.8 (Entire)	LOS A	1.8 (Entire)	LOS A

INTERSECTION ANALYSIS – DESIGN YEAR 2045 NO PROJECT CONDITIONS

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / Movement (sec/veh)	LOS	Delay / Movement (sec/veh)	LOS
1. SR 120 EB Ramps / Yosemite Avenue	All-Way Stop Controlled	550.6 (EB LT)	LOS F	1,212.3 (EB LT)	LOS F
		542.8 (EB RT)	LOS F	1,211.8 (EB RT)	LOS F
		39.2 (NB TH)	LOS E	1,200.7 (NB TH)	LOS F
		10.2 (NB RT)	LOS B	557.9 (NB RT)	LOS F
		73.8 (SB LT)	LOS F	84.2 (SB LT)	LOS F
		75.6 (SB TH)	LOS F	85.6 (SB TH)	LOS F
		324.1 (Entire)	LOS F	883.2 (Entire)	LOS F
2. SR 120 WB Ramps / Yosemite Avenue	All-Way Stop Controlled	1,064.9 (WB LT)	LOS F	249.9 (WB LT)	LOS F
		1,037.1 (WB RT)	LOS F	233.4 (WB RT)	LOS F
		65.6 (NB LT)	LOS F	78.3 (NB LT)	LOS F
		66.8 (NB TH)	LOS F	80.1 (NB TH)	LOS F
		330.6 (SB TH)	LOS F	829.3 (SB TH)	LOS F
		27.3 (SB RT)	LOS D	159.6 (SB RT)	LOS F
		551.1 (Entire)	LOS F	326.9 (Entire)	LOS F
Bold text identifies unacceptable delay and unacceptable LOS.					

INTERSECTION ANALYSIS – DESIGN YEAR 2045 WITH ALTERNATIVE 1 PROJECT CONDITIONS

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / Movement (sec/veh)	LOS	Delay / Movement (sec/veh)	LOS
1. SR 120 EB Ramps / Yosemite Avenue	Signalized	29.0 (EB LT)	LOS C	48.4 (EB LT)	LOS D
		18.2 (EB RT)	LOS B	9.7 (EB RT)	LOS A
		20.7 (NB TH)	LOS C	48.0 (NB TH)	LOS D
		4.0 (NB RT)	LOS A	17.0 (NB RT)	LOS B
		25.1 (SB LT)	LOS C	41.6 (SB LT)	LOS D
		23.8 (SB TH)	LOS C	18.1 (SB TH)	LOS B
		22.1 (Entire)	LOS C	33.6 (Entire)	LOS C
2. SR 120 WB Ramps / Yosemite Avenue	Signalized	35.2 (WB LT)	LOS D	42.1 (WB LT)	LOS D
		9.9 (WB RT)	LOS A	10.9 (WB RT)	LOS B
		26.5 (NB TH)	LOS C	16.5 (NB TH)	LOS B
		10.1 (NB RT)	LOS B	10.4 (NB RT)	LOS B
		35.5 (SB LT)	LOS D	34.3 (SB LT)	LOS C
		11.4 (SB TH)	LOS B	7.0 (SB TH)	LOS A
		23.3 (Entire)	LOS C	18.4 (Entire)	LOS B

Given that the analysis is only based on readily available information, the following general conclusions can be made about Alternative 1 operations for the design year 2045:

1. During the AM peak hour, the SR 120 EB Ramps/Yosemite Avenue intersection operates at acceptable LOS A/B/C conditions;
2. During the AM peak hour, the SR 120 WB Ramps/Yosemite Avenue intersection operates at acceptable LOS A/B/C/D conditions;
3. During the PM peak hour, the SR 120 EB Ramps/Yosemite Avenue intersection operates at acceptable LOS A/B/C/D conditions;
4. During the PM peak hour, the SR 120 WB Ramps/Yosemite Avenue intersection operates at acceptable LOS A/B/C/D conditions.

The TEPA is included as Attachment F and evaluates freeway operational analysis for Alternative 1 and the No Project Alternative for current year conditions and design year 2045. The TEPA also outlines a traffic scope for the PA&ED phase. This will include a detailed traffic analysis that will evaluate the alternatives to support the purpose and need of the project.

5. DEFICIENCIES

Major deficiencies with the existing SR 120/Yosemite Ave interchange and the development of the SLSP include:

1. LOS for existing SR 120/Yosemite Ave interchange is forecasted to degrade to level F,
2. Existing interchange does not have pedestrian or bicycle facilities.
3. Existing interchange spacing between Yosemite Avenue interchange and I-5 freeway-to-freeway interchange.

6. CORRIDOR AND SYSTEM COORDINATION

The following is a summary of the Transportation Planning Scoping Information Sheet (TPSIS), see Attachment G.

SR 120 is on the Interregional Road System and Freeway and Expressway System, currently consistent with the Surface Trucking Assistance Act of 1984, and classified as a terminal access route. Future improvements include the SR 120 widening from four-lanes to 6-lanes (EA 10-1H150K), the I-5 HOV widening (EA 10-1H160K), and ramp metering improvements (EA 10-1F040K) projects. SR 120/Yosemite Avenue Interchange improvements will need to coordinate with these improvement projects along mainline during design and construction.

Community Planning

The Public Information Office has contacted and received input from concerned community groups about the project. The environmental documents will be circulated for public comment during the PA&ED phase.

Freight Planning

The project will allow more efficient movements of trucks through the interchange by providing a greater number of connecting lanes.

Transit

There are no transit facilities within the area and transit routes will not be affected during construction.

Bicycle

The existing condition does not accommodate a bike route. The proposed improvement will provide Class II bike lanes on Guthmiller Road.

Pedestrian

The existing condition does not have pedestrian facilities. The local development will be providing sidewalks that will be included in the build alternatives.

7. ALTERNATIVES

The following four identified interchange improvement alternatives:

1. Westbound SR 120 Type L-7
2. Westbound SR 120 Type L-9
3. Diverging Diamond Interchange
4. No Project

Alternative 1 is the locally preferred alternative as it provides operational benefits and increases weaving distance along westbound SR 120 between Yosemite Avenue Interchange and I-5. Alternative 1 was initially evaluated within the South Lathrop Specific Plan Environmental Impact Report.

Alternative 2, and Alternative 3 may not improve weaving distance on SR120 between the Yosemite Avenue interchange and the I-5 freeway-to-freeway interchange. These alternatives may require additional right of way acquisition west of the interchange and may impact the Union Pacific Railroad (UPRR) structure west of the project site. During the PA&ED phase, more detailed engineering studies will be performed and these Alternatives will be reevaluated.

Alternative 4 is the No Project alternative and is projected to provide LOS F with the buildout of the SLSP.

General Interchange Improvements

All identified interchange improvement alternatives, excluding the No Project alternative, will include the following components in addition to items identified in their respective sections:

1. Installing traffic signals at ramp terminals to provide coordinated signal operation and intelligent transportation systems for emergency vehicle access.
2. Installing ramp metering to reduce mainline congestion and increase network mobility.
3. Widening the eastbound off-ramp at the ramp terminal for turning movements (two left and two right).

4. Widening the eastbound on-ramp to three-lanes (two mixed-flow and one HOV lane) to provide 12-foot lanes, standard shoulders, CHP enforcement areas, and maintenance vehicle pullouts (MVPs).
5. Widening Yosemite/Guthmiller Road between ramp terminals to include four to five 12-foot lanes, two 8-foot bike lanes, and one 6-foot sidewalk. Retaining walls will be constructed under the existing SR 120 structures.
6. Widening Yosemite/Guthmiller Road north of WB ramp terminal to include six 12-foot lanes, two 8-foot bike lanes, and one 6-foot sidewalk.
7. Providing auxiliary lanes between the Yosemite Avenue interchange and the northbound I-5 connector ramps.

Alternative 1 – Westbound SR 120 Type L-7

Alternative 1 proposes to reconfigure the westbound SR 120 on and off-ramps from a tight diamond configuration (Type L-1) to a loop on-ramp and diagonal off-ramp configuration (Type L-7), see Attachment B. In addition to the general interchange improvements, Alternative 1 will include the following:

1. Replacing SR 120 westbound diagonal on-ramp with loop on-ramp with two 12-foot mixed-flow lanes, one 12-foot HOV lane, and standard width shoulders. Widening of the existing structure will be needed to accommodate the loop on-ramp.
2. Relocating the westbound diagonal off-ramp to create space for the proposed loop on-ramp. The ramp will be a single lane exit that will expand to three turning lanes at the ramp terminal.

Alternative 2 – Westbound SR 120 Type L-9

Alternative 2 proposes to reconfigure the westbound SR 120 on and off-ramps from a tight diamond configuration (Type L-1) to a loop on-ramp, diagonal on-ramp, and diagonal off-ramp configuration (Type L-9). In addition to the general interchange improvements, Alternative 2 will include the following:

1. Adding the SR 120 westbound loop on-ramp with two mixed use 12-foot lanes, one HOV 12-foot lane, and standard shoulders.
2. Relocating the westbound diagonal off-ramp to create space for the proposed loop on-ramp. The ramp is proposed to be a single lane exit that will expand to three turning movements at the ramp terminal.
3. Relocating the westbound diagonal on-ramp to match off/on-ramp terminal. The ramp is proposed with two lanes, one mixed-flow and one HOV, and connects with the acceleration/auxiliary merge lane.

Alternative 3 – Diverging Diamond Interchange

Alternative 3 proposes to improve Guthmiller Road to a Diverging Diamond Interchange (DDI) and will include the following:

1. Construct/modify existing on/off-ramp to accept DDI geometry and movements. Widen to include HOV lanes and widen mainline shoulder to include acceleration/auxiliary lanes.
2. Widening the westbound on-ramp to three-lanes with two mixed-flow and one HOV. On-ramp will include 12-foot lanes, standard shoulders, CHP enforcement areas, and acceleration/auxiliary lane.
3. Widening the westbound off-ramp at the ramp terminal for three turning movements.

Alternative 4 – No Project

Alternative 4 is the “No Project” alternative which does not meet the need an purpose of this project. With the “No Project” alternative, the forecasted LOS will continue to degrade to level F with the build-out of SLSP.

Underlined Nonstandard Design Features

The following underlined nonstandard design features require documentations for all build alternatives. The documents requesting for nonstandard design features will be prepared and submitted for approval during the PA&ED phase.

- HDM 304.1(a) Side Slopes in New Embankment Construction: Designs will use 4:1 or flatter slopes where possible but may use up to 2:1 slopes to remain within existing ROW and to match existing mainline slopes.
- HDM 501.3 Minimum Interchange Spacing: The minimum interchange spacing shall be two miles between freeway-to-freeway interchanges and other interchanges
- HDM 504.3 (3) Location and Design of Ramp Intersections on the Crossroads: The minimum distance should be 500 feet. The proposed distance between a local road and EB off-ramp ramp design is 405 feet.
- HDM 504.7 Weaving Sections: The minimum weaving distance between interchanges in urban is 2000 feet; the proposed distance between the WB loop entrance ramp and the I-5 NB ramp is approximately 1600 feet.

Design Standards Risk Assessment

The following table lists the design standards that will likely not be met for the proposed alternative, and the probability of approval for each potential deviation from standards.

Design Standards Risk Assessment			
Alternative	Design Standard from Highway Design Manual Tables 82.1A & 82.1B	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High,)	Justification for Probability Rating
1, 2, and 3	HDM 304.1(a)	High	Non-standard slopes are existing along SR-120 and assumed design will maintain existing slope geometry. Excessive cost and right of way impacts.
1, 2, and 3	HDM 501.3	Medium	Existing freeway-to-freeway/interchange spacing is less than standard. The proposed interchange improvements will not change the existing spacing. Excessive cost and right of way impacts.

1, 2, and 3	HDM 504.3(3)	Medium	Existing intersection/interchange spacing is less than standard. The proposed interchange buildout and neighboring development improvements will increase spacing but remain less than standard. Excessive cost and right of way impacts.
1, 2, and 3	HDM 504.7	Medium-Low	Existing freeway-to-freeway/interchange weaving length is less than standard. The proposed interchange improvements will not meet the standard length requirement due to excessive cost and right of way impacts.

Stormwater Management

Alternative 1 is evaluated within the Long Form Stormwater Data Report, dated August 2018. Alternative 1 may require Section 404 permit, general construction permit, and 401 water quality certifications. All stormwater will be retained in Caltrans right of way and will not directly or indirectly discharge into waterways, therefore, no permanent treatment BMPs will be required. Alternative 1 will result in approximately 24.7 acres of temporary disturbed soil area, and approximately 4.0 acres new impervious surface.

Traffic Management Plan

Construction of all alternatives can be staged to maintain freeway ramp traffic. The temporary ramp and shoulder closures will be required for the installation of temporary traffic barriers.

8. RIGHT-OF-WAY

The following section includes project information addressing right of way acquisition, utility relocation, and railroad right of way.

Right of Way Acquisition

Alternative 1 requires additional right of way from one parcel north of the existing SR 120/Yosemite Interchange to construct the westbound loop on-ramp and diagonal off-ramp. Right of way Conceptual Cost Estimate Components are included as Attachment H.

Alternative 2 requires additional right of way from two parcels north of the existing SR 120/Yosemite Interchange to construct the westbound loop on-ramp and diagonal off-ramp. Right of way Conceptual Cost Estimate Components are included as Attachment H.

Alternative 3 requires additional right of way from four parcels north and south of the existing SR 120/Yosemite Interchange to construct the westbound loop on-ramp and diagonal off-ramp. Right of way Conceptual Cost Estimate Components are included as Attachment H.

Utility Relocation

Utility relocation may be required within the existing access control limits of the SR 120/Yosemite Avenue interchange for all alternatives. Detailed project design must be completed to determine if the above ground electrical and communication lines north of the interchange will need to be relocated due to widening, ramp construction, or signal pole conflicts. Utility involvement is

expected to be limited to providing new electric service for the new signalized ramp intersection, and for the HOV ramp metering on the eastbound and westbound on-ramp.

Railroad Right of Way

No work will be performed within the UPRR right of way for Alternative #1. Alternative #2 and Alternative #3 may impact the UPRR structure.

9. CONSIDERATIONS REQUIRING DISCUSSIONS

Asset Management

The performance objectives in this project do not impact the District 10 Transportation Asset Management Plan. Nevertheless, the performance objectives identified in this project are Pavement Class 1, 2 CCTV cameras, 2 ramp metering systems, 2 Traffic Signals. Attachment L shows a comprehensive list of performance measures for this project.

10. COMPLETE STREETS

Per Deputy Directive DD-64-R2 – Complete Streets - Integrating the Transportation System, the project will evaluate the needs of travelers of all ages and abilities in the subsequent phases of the project. The project will consider increased transportation choices, improved safety for all users, reduced congestion to improve air quality. The project will include sidewalks and on street bike lanes.

11. CLIMATE CHANGE, AND GREENHOUSE GAS (GHG)

The proposed project is not considered a major project that would contribute to climate change. The project is a congestion relief and capacity increasing project and requires a quantitative analysis for CO² emission in a technical memo. This will be prepared during the PA&ED phase.

Climate change considerations were evaluated, and it was determined that the scope of this project is not susceptible to climate change factors such as increased flooding or sea level rise. Additional sea level rise adaptation measures are not needed for the project since the project is not located in a coastal zone or vulnerable to sea level rise.

The transportation sector is a major contributor of greenhouse gas (GHG) emissions. GHG emissions will be analyzed in the Air Quality Analysis. Analysis of the emissions will be provided following Caltrans guideline during the PA&ED phase.

12. STAKEHOLDER INVOLVEMENT

The draft Environmental Document will be circulated for public review (30 days) during the PA&ED phase. A request for a public hearing will be available during circulation. Currently, no project specific public hearing is planned. Public comments can be submitted during the circulation period and environmental document adoption.

13. ENVIRONMENTAL COMPLIANCE

A Preliminary Environmental Analysis Report (PEAR) was prepared and is included as Attachment E. This locally funded project with the anticipated environmental approval documents will be an Initial Study/Mitigated Negative Declaration for CEQA and a “Routine” Environmental Assessment/Finding of No Significant Impact (FONSI) for NEPA.

Special Considerations to be included in PA&ED:

- **Air Quality:** Overall project is non-exempt, and an air quality report is required.
- **Biologic and Aquatic Resources:** Does not appear to have any wetlands and water features within the project site but the consultation with CDFW and USFWS may be required.
- **Cultural Resources:** There are no known cultural resources expected within the project site however, a full survey and report that will include a Historic Property Survey Report/Architectural Survey Report (HPSR/ASR) will be prepared.
- **Energy and Climate Change:** The proposed project is not considered a major project for consummation of energy during project construction or operation; therefore, and energy report is not required.
- **Floodplain and Runoff:** A Stormwater Data Report will be prepared.
- **Noise:** The project is expected to be a Type 1, therefore, a Noise Study Report is anticipated.
- **Visual Resources:** The Visual Impact Assessment Questionnaire indicates that the project will have negligible visual impacts and could be addressed in a brief technical memorandum.
- **Hazardous Materials:** A Preliminary Site Investigation for aerially deposited lead, lead-based paint and asbestos containing materials will be required.

14. FUNDING

Crow Holding Industrial and the City will fund this project; however, the City will pursue Federal funding.

Capital Outlay Project Estimate

Alternative	Range of Estimate		STIP Funds		Estimated Developer Funds	
	Construction	Right-of-Way	Construction	Right-of-Way	Construction	Right-of-Way
1	\$25M-\$29M	\$3M-\$4M	---	---	\$29.9 M	\$3.7 M
2	\$29M-\$33M	\$7M-\$8M	---	---	\$29.9 M	\$3.7 M
3	\$36M-\$42M	\$14M-\$17M	---	---	\$29.9 M	\$3.7 M

The current cost range of estimate for construction and right of way are only accurate to within the identified ranges and are useful for long-range planning purposes only. The capital outlay project estimates should not be used to program or commit State-programmed capital outlay funds.

Capital Outlay Support Estimate

The current capital outlay support cost is estimated at \$6.4M for Alternative 1.

15. DELIVERY SCHEDULE

The proposed schedule of SR 120/Yosemite Avenue interchange improvement project is included below.

HQ Milestones		Scheduled Delivery Date (Month Year)
Begin Environmental	M020	August 2019
Circulate Draft ED	M120	June 2020
PA & ED	M200	December 2020
Begin Design	M210	January 2021
Right of Way Maps	M224	April 2021
PS&E to District Office Engineer	M377	February 2022
Right of Way Certification	M410	October 2022
Ready to List	M460	October 2022
Advertise	M480	November 2022
Award	M495	January 2023
Approve Contract	M500	February 2023
Contract Acceptance	M600	September 2023
Final Report	M700	March 2024
End Project	M800	September 2024

The anticipated funding fiscal year for construction is 2022/23

16. RISKS

A Risk Register is included as Attachment I. The Risk Register is an assessment of potential risks and impacts to the overall project that may occur in subsequent project phases. There are no high-risk items for this project.

17. EXTERNAL AGENCY COORDINATION

This project may require the following coordination as identified within the SLSP EIR:

US Army Corps of Engineers

Department of the Army permit for:

Clean Water Act Section 404

Central Valley Regional Water Quality Control Board

Regional Water Quality Control Board for:

Section 401 Water Quality Certification

General Construction permits

San Joaquin Council of Governments

SJ Council of Governments agreement for:

Coverage/Incidental Take Authorization under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

San Joaquin Valley Unified Air Pollution Control District

Unified Air Pollution Control District for:

Indirect Source Rule Permit

Authority to Construct

18. PROJECT REVIEWS

Field Review _____		Date	11/10/16
District Maintenance _____	Roger Abellana	Date	12/11/18
District Traffic Engineer _____	Mike Lane	Date	12/3/18
District Traffic Design _____	Hue Nquyen	Date	12/10/18
District Traffic Management _____	Evergleen Cara	Date	12/13/18
District Traffic Planning & Forecasting _____	Irene Tu	Date	11/26/18
Signal and Ramp Metering Branch _____	Soraya Entezar	Date	12/5/18
Headquarters Project Delivery Coordinator _____	Paul Gennaro	Date	5/17/19
Project Manager _____	Wuthy Seng	Date	12/14/18
District Design _____	Ramin Kalantari	Date	11/26/18
FHWA _____		Date	
District Safety Review _____	Mark Orr	Date	12/3/18
Constructability Review _____	Central Region Reviewers	Date	12/14/18
District Environmental _____	Janet Bailey	Date	11/20/18
District Hydraulics _____	James Yan	Date	12/7/18
Other _____		Date	

19. PROJECT PERSONNEL

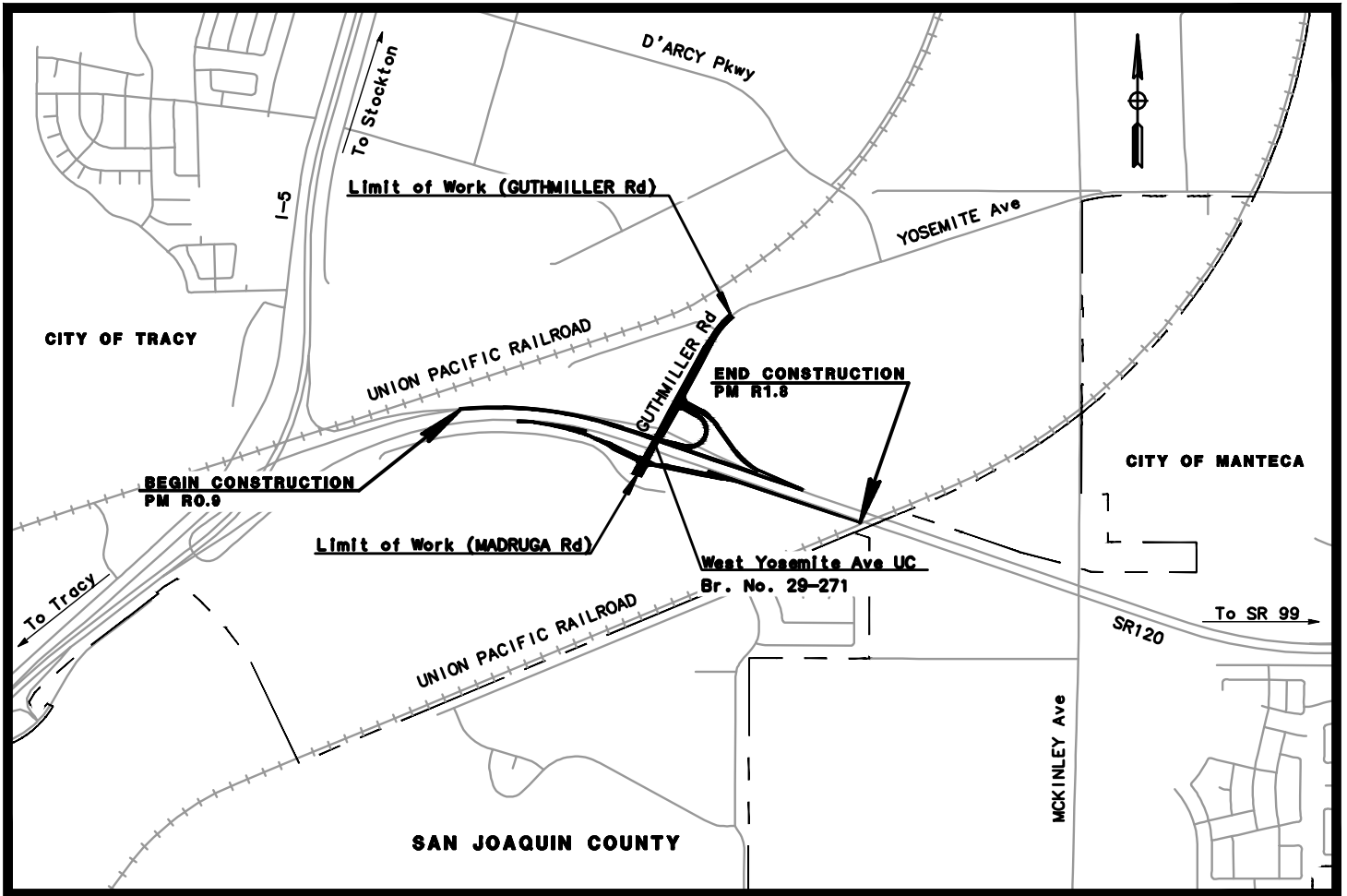
Aaron Silva, Project Manager – Mark Thomas	(916) 381-9100
Wuthy Seng, Caltrans Special Funded Project Management	(209) 948-7854
Jaycee A. Azevedo, Caltrans Office of Environmental Planning	(209) 948-1919
Nomer Gutierrez, Caltrans Design Oversight	(209) 948-7079
Ramin Kalantari, Caltrans Design Oversight	(209) 948-7754
Vu H. Nguyen, Caltrans Highway and Freeway Engineering	(209) 603-5126
David Sherman , Caltrans Right of Way	(559) 455-6225
William Crenshaw, Environmental – De Novo Planning Group	(916) 350-0009
Fred Choa, Traffic Analysis – Fehr & Peers	(916) 262-7392

20. ATTACHMENTS

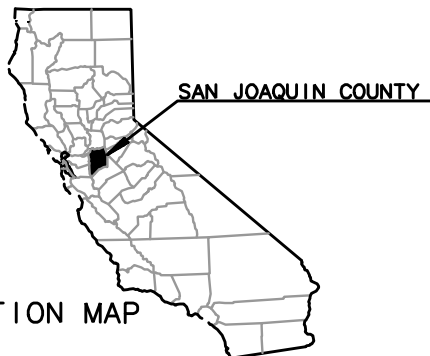
- A. Location Map
- B. Project Alternatives
- C. Project Cost Estimates
- D. Typical Cross Sections
- E. Preliminary Environmental Analysis Report (PEAR)
- F. Traffic Engineering Performance Assessment (TEPA)
- G. Transportation Planning Scoping Information Sheet
- H. Right of Way Conceptual Cost Estimate Component
- I. Risk Register
- J. Stormwater Data Report
- K. Transportation Management Plan Checklist
- L. SHOPP Performance Measures
- M. South Lathrop Specific Plan (SLSP)

Attachment A

Location Map



**CROW HOLDINGS INDUSTRIAL - SR120/YOSEMITE AVE
VICINITY MAP**



LOCATION MAP

Attachment B

**Project Alternatives
(Exhibit)**

**S. LATHROP SR 120/YOSEMITE
GEOMETRICS**

ALTERNATIVE 1

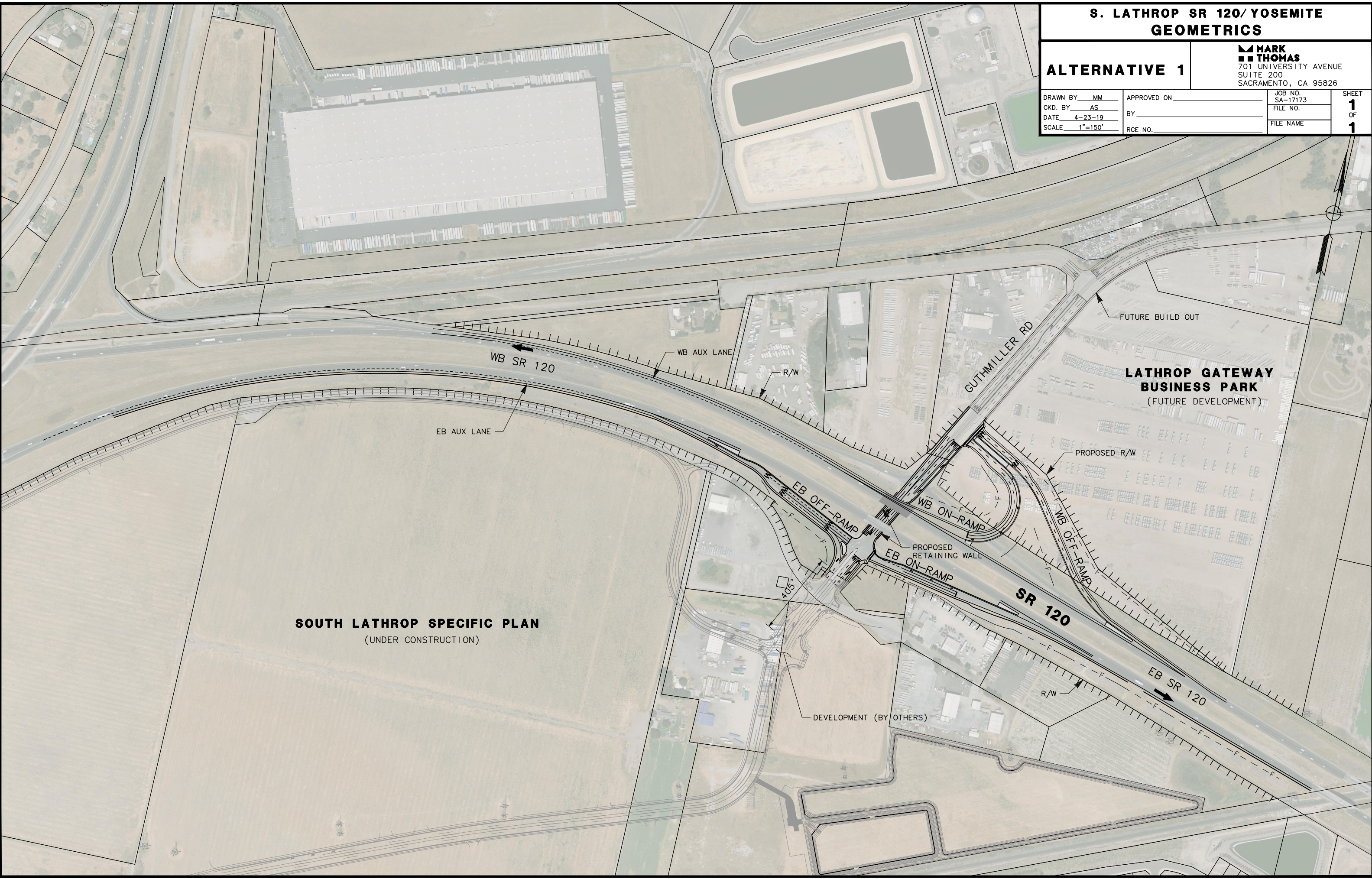
**MARK
THOMAS**
701 UNIVERSITY AVENUE
SUITE 200
SACRAMENTO, CA 95826

DRAWN BY MM
CKD. BY AS
DATE 4-23-19
SCALE 1"=150'

APPROVED ON _____
BY _____
RCE NO. _____

JOB NO. SA-17173
FILE NO. _____
FILE NAME _____

SHEET
1
OF
1



SOUTH LATHROP SPECIFIC PLAN
(UNDER CONSTRUCTION)

**LATHROP GATEWAY
BUSINESS PARK**
(FUTURE DEVELOPMENT)

SR 120

WB SR 120

EB SR 120

GUTHMILLER RD

DEVELOPMENT (BY OTHERS)

PROPOSED R/W

PROPOSED RETAINING WALL

WB AUX LANE

EB AUX LANE

EB OFF-RAMP

WB ON-RAMP

EB ON-RAMP

WB OFF-RAMP

405'



**S. LATHROP SR 120/YOSEMITE
GEOMETRICS**

ALTERNATIVE 2

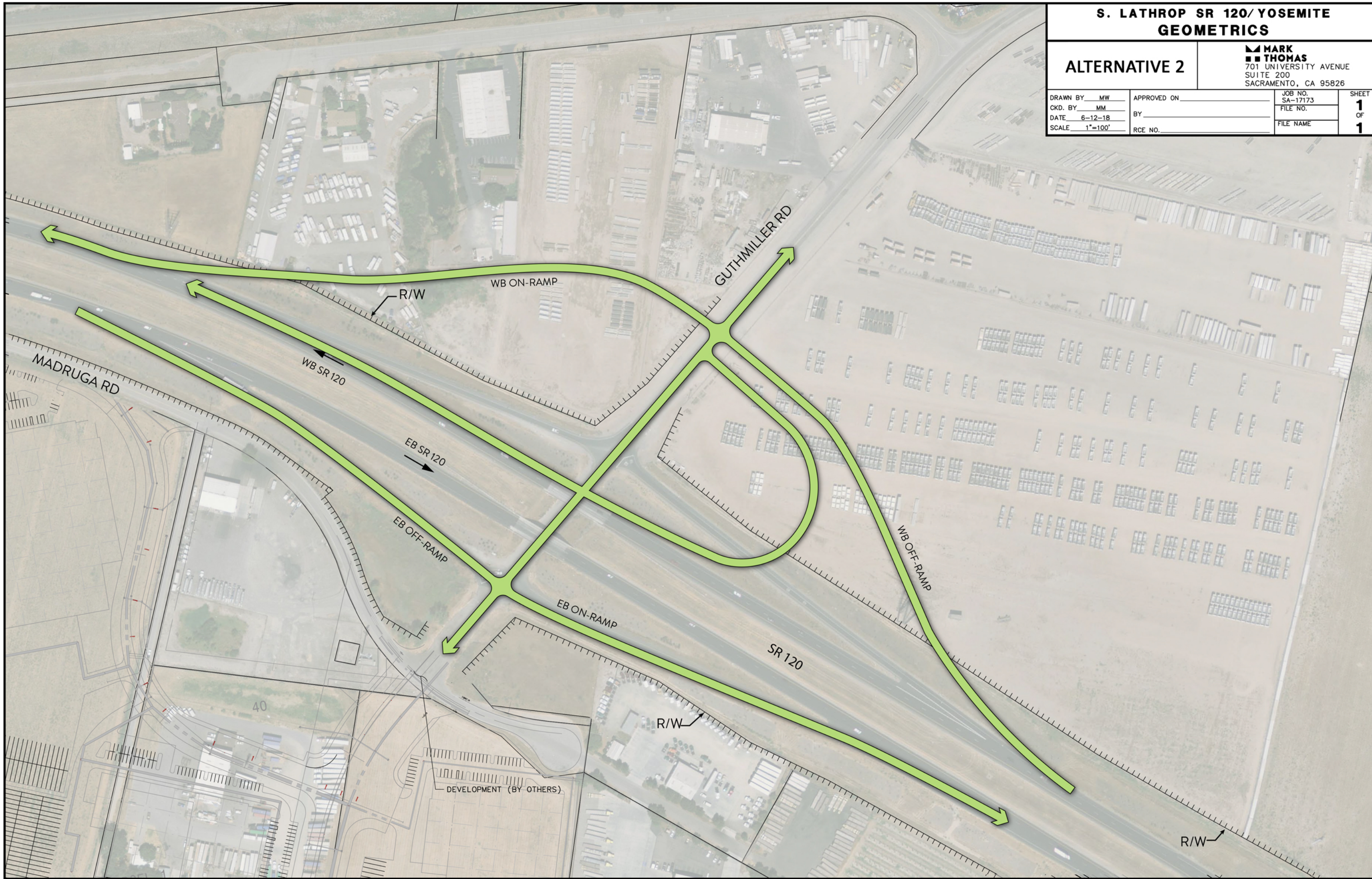
**MARK
THOMAS**
701 UNIVERSITY AVENUE
SUITE 200
SACRAMENTO, CA 95826

DRAWN BY MW
CKD. BY MM
DATE 6-12-18
SCALE 1"=100'

APPROVED ON _____
BY _____
RCE NO. _____

JOB NO.
SA-17173
FILE NO.
FILE NAME

SHEET
1
OF
1



**S. LATHROP SR 120/YOSEMITE
GEOMETRICS**

ALTERNATIVE 3

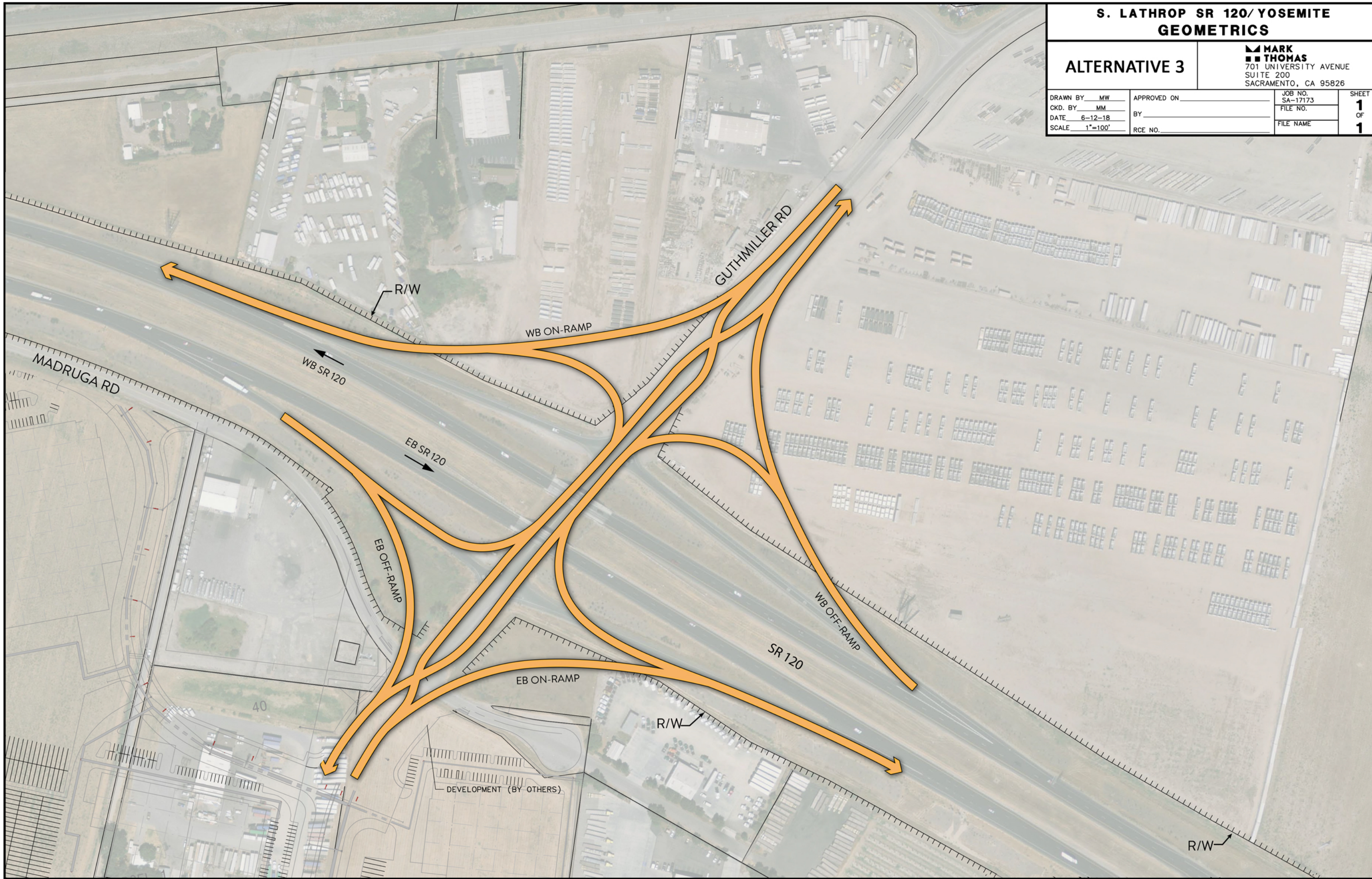
**MARK
THOMAS**
701 UNIVERSITY AVENUE
SUITE 200
SACRAMENTO, CA 95826

DRAWN BY MW
CKD. BY MM
DATE 6-12-18
SCALE 1"=100'

APPROVED ON _____
BY _____
RCE NO. _____

JOB NO.
SA-17173
FILE NO.
FILE NAME

SHEET
1
OF
1



Attachment C

Project Cost Estimates

**PROJECT
PLANNING COST ESTIMATE**

EA: 10-1G760

EA: 10-1G760 PID: 1017000160

PID: 1017000160

District-County-Route: 10-SJ-120

PM: R0.5/R1.8

Type of Estimate : Project Study Report / Project Design Study (PSR-PDS)

Program Code : 20.xx.400.100 - Locally Generated Funds

Project Limits : 10-SJ-120; PM R0.5-R1.8

Project Description: Interchange Capacity Improvements

Reconfigure the westbound SR 120 on and off-ramps from a tight diamond configuration (Type L-1) to a loop on-ramp and

Scope : diagonal off-ramp configuration (Type L-7). Will include traffic signals, and ramp metering, widen local roads with sidewalks and Class III bike lanes.

Alternative : Alternative 1 - Westbound SR 120 Type L-7

SUMMARY OF PROJECT COST ESTIMATE

	<u>Current Year Cost</u>	<u>Escalated Cost</u>
TOTAL ROADWAY COST	\$ 24,008,700	\$ 27,453,189
TOTAL STRUCTURES COST	\$ 1,470,000	\$ 1,680,898
SUBTOTAL CONSTRUCTION COST	\$ 25,478,700	\$ 29,134,087
TOTAL RIGHT OF WAY COST	\$ 3,620,000	\$ 4,200,000
TOTAL CAPITAL OUTLAY COSTS	\$ 29,099,000	\$ 33,335,000
PR/ED	\$ 1,100,000	\$ 1,100,000
PS&E	\$ 2,320,000	\$ 2,320,000
RIGHT OF WAY	\$ 80,000	\$ 80,000
CONSTRUCTION SUPPORT	\$ 2,850,000	\$ 2,850,000
ENVIRONMENTAL MITIGATION	\$ -	\$ -
TOTAL SUPPORT COST	\$ 6,350,000	\$ 6,350,000

TOTAL PROJECT COST	\$ 35,450,000	\$ 39,700,000
---------------------------	----------------------	----------------------

If Project has been programmed enter Programmed Amount

Date of Estimate (Month/Year) February / 2019

Estimated Construction Start (Month/Year) August / 2022

Number of Working Days = 180

Estimated Mid-Point of Construction (Month/Year) June / 2023

Estimated Construction End (Month/Year) September / 2024

Number of Plant Establishment Days

Estimated Project Schedule

PID Approval November-18
 PA/ED Approval December-20
 PS&E February-22
 RTL April-22
 Begin Construction August-22

Reviewed by District O.E. or Cost Estimate Certifier: Matt Magaw Matt Magaw 6/18/2018 (916) 403 5743

Office Engineer / Cost Estimate Certifier Date Phone

Approved by Project Manager: Aaron Silva Aaron Silva 6/18/2018 (916) 381-9100

Project Manager Date Phone

PROJECT COST ESTIMATE

EA: 10-1G760 PID: 1017000160

I. ROADWAY ITEMS SUMMARY

	Section	Cost
1	Earthwork	\$ 3,598,100
2	Pavement Structural Section	\$ 4,576,300
3	Drainage	\$ 300,000
4	Specialty Items	\$ 827,000
5	Environmental	\$ 374,000
6	Traffic Items	\$ 4,549,300
7	Detours	\$ -
8	Minor Items	\$ 711,300
9	Roadway Mobilization	\$ 1,194,900
10	Supplemental Work	\$ 1,160,600
11	State Furnished	\$ 938,300.00
12	Time-Related Overhead	\$ 977,100.00
13	Roadway Contingency	\$ 4,801,800.00

TOTAL ROADWAY ITEMS	\$ 24,008,700
----------------------------	----------------------

Estimate Prepared By :	Matt Magaw, MT Project Engineer	2/18/2019	(916) 403 5743
	Name and Title	Date	Phone

Estimate Reviewed By :	Aaron Silva, MT Project Manager	2/18/2019	(916) 381 9100
	Name and Title	Date	Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price (\$)		Cost
190101	Roadway Excavation	CY	30,000	x	35.00	= \$	1,050,000
19010X	Roadway Excavation (Type X) ADL	CY		x		= \$	-
194001	Ditch Excavation	CY		x		= \$	-
198010	Imported Borrow	CY	90,000	x	25.00	= \$	2,250,000
192037	Structure Excavation (Retaining Wall)	CY	1,481	x	85.00	= \$	125,885
193013	Structure Backfill (Retaining Wall)	CY	1,022	x	100.00	= \$	102,200
193031	Pervious Backfill Material (Retaining Wall)	CY		x		= \$	-
160100	Clearing & Grubbing	LS	1	x	40,000.00	= \$	40,000
170101	Develop Water Supply	LS	1	x	30,000.00	= \$	30,000
210130	Duff	ACRE		x		= \$	-
XXXXXX	Some Item	Unit					-

TOTAL EARTHWORK SECTION ITEMS	\$	3,598,100
--------------------------------------	-----------	------------------

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price (\$)		Cost
401050	Jointed Plain Concrete Pavement	CY		x		= \$	-
400050	Continuously Reinforced Concrete Pavement	CY		x		= \$	-
404092	Seal Pavement Joint	LF		x		= \$	-
404093	Seal Isolation Joint	LF		x		= \$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		= \$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		= \$	-
280010	Rapid Strength Concrete Base	CY		x		= \$	-
410095	Dowel Bar (Drill and Bond)	EA		x		= \$	-
390132	Hot Mix Asphalt (Type A)	TON	16,000	x	110.00	= \$	1,760,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	8,000	x	110.00	= \$	880,000
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		= \$	-
26020X	Class 2 Aggregate Base	CY	18,000	x	85.00	= \$	1,530,000
290201	Asphalt Treated Permeable Base	CY		x		= \$	-
250401	Class 4 Aggregate Subbase	CY		x		= \$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		= \$	-
397005	Tack Coat	TON		x		= \$	-
377501	Slurry Seal	TON		x		= \$	-
3750XX	Screenings (Type XX)	TON		x		= \$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		= \$	-
370001	Sand Cover (Seal)	TON		x		= \$	-
730010	Minor Concrete (Curb)	LF	2,000	x	40.00	= \$	80,000
731530	Minor Concrete (Textured Paving)	CY	280	x	600.00	= \$	168,000
731502	Minor Concrete (Miscellaneous Construction)	CY	250	x	500.00	= \$	125,000
39407X	Place Hot Mix Asphalt Dike (Type X)	LF	2,000	x	2.00	= \$	4,000
150771	Remove Asphalt Concrete Dike	LF		x		= \$	-
420201	Grind Existing Concrete Pavement	SQYD		x		= \$	-
150860	Remove Base and Surfacing	CY		x		= \$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		= \$	-
15312X	Remove Concrete	LF/CY/LS		x		= \$	-
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD	75	x	36.00	= \$	2,700
153103	Cold Plane Asphalt Concrete Pavement	SQYD	13,300	x	2.00	= \$	26,600
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		= \$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		= \$	-
420102	Groove Existing Concrete Pavement	SQYD		x		= \$	-
390136	Minor Hot Mix Asphalt	TON		x		= \$	-
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		= \$	-
XXXXXX	Some Item	Unit		x		= \$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS	\$	4,576,300
--	-----------	------------------

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price (\$)		Cost
15080X	Remove Culvert	EA/LF	x	=	\$		-
150820	Modify Inlet	EA	x	=	\$		-
155232	Sand Backfill	CY	x	=	\$		-
15020X	Abandon Culvert	EA/LF	x	=	\$		-
152430	Adjust Inlet	LF	x	=	\$		-
155003	Cap Inlet	EA	x	=	\$		-
510501	Minor Concrete	CY	x	=	\$		-
510502	Minor Concrete (Minor Structure)	CY	x	=	\$		-
5105XX	Minor Concrete (Type XX)	CY	x	=	\$		-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF	x	=	\$		-
6411XX	XX" Plastic Pipe	LF	x	=	\$		-
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF	x	=	\$		-
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF	x	=	\$		-
68XXXX	XX" Plastic Pipe (Edge Drain)	LF	x	=	\$		-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Thic	LF	x	=	\$		-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF	x	=	\$		-
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF	x	=	\$		-
7050XX	XX" Steel Flared End Section	EA	x	=	\$		-
703233	Grated Line Drain	LF	x	=	\$		-
72XXXX	Rock Slope Protection (Type and Method)	CY/TON	x	=	\$		-
72901X	Rock Slope Protection Fabric (Class X)	SQYD	x	=	\$		-
721420	Concrete (Ditch Lining)	CY	x	=	\$		-
721430	Concrete (Channel Lining)	CY	x	=	\$		-
750001	Miscellaneous Iron and Steel	LB	x	=	\$		-
XXXXXX	Additional Drainage	LS	1	x	300,000.00	= \$	300,000

TOTAL DRAINAGE ITEMS	\$	300,000
-----------------------------	-----------	----------------

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price (\$)		Cost
080050	Progress Schedule (Critical Path Method)	LS	1	x	25,000.00	= \$	25,000
582001	Sound Wall (Masonry Block)	SQFT	x	=	\$		-
510530	Minor Concrete (Wall)	CY	x	=	\$		-
15325X	Remove Sound Wall	LF/LS	x	=	\$		-
070030	Lead Compliance Plan	LS	1	x	5,000.00	= \$	5,000
141120	Treated Wood Waste	LB	x	=	\$		-
153221	Remove Concrete Barrier	LF	x	=	\$		-
150662	Remove Metal Beam Guard Railing	LF	x	=	\$		-
150668	Remove Flared End Section	EA	x	=	\$		-
8000XX	Chain Link Fence (Type XX)	LF	x	=	\$		-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA	x	=	\$		-
832001	Metal Beam Guard Railing	LF	x	=	\$		-
839301	Single Thrie Beam Barrier	LF	x	=	\$		-
839310	Double Thrie Beam Barrier	LF	x	=	\$		-
839521	Cable Railing	LF	x	=	\$		-
8395XX	Terminal System (Type CAT)	EA	x	=	\$		-
839585	Alternative Flared Terminal System	EA	x	=	\$		-
839584	Alternative In-line Terminal System	EA	x	=	\$		-
4906XX	CIDH Concrete Piling (Insert Diameter)	LF	x	=	\$		-
839XXX	Crash Cushion (Insert Type)	EA	x	=	\$		-
83XXXX	Concrete Barrier (Insert Type)	LF	x	=	\$		-
520103	Bar Reinforced Steel (Retaining Wall)	LB	12,000	x	2.00	= \$	24,000
510060	Structural Concrete, Retaining Wall	CY	150	x	1,100.00	= \$	165,000
513553	Retaining Wall (Masonry Wall)	SQFT	3,400	x	120.00	= \$	408,000
511035	Architectural Treatment	SQFT	x	=	\$		-
598001	Anti-Graffiti Coating	SQFT	x	=	\$		-
203070	Rock Stain	SQFT	x	=	\$		-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT	x	=	\$		-
83954X	Transition Railing (Type X)	EA	x	=	\$		-
597601	Prepare and Stain Concrete	SQFT	x	=	\$		-
839561	Rail Tensioning Assembly	EA	x	=	\$		-
83958X	End Anchor Assembly (Type X)	EA	x	=	\$		-
XXXXXX	Some Specialty Items	LS	1	x	200,000.00	= \$	200,000

TOTAL SPECIALTY ITEMS	\$	827,000
------------------------------	-----------	----------------

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
	LS	x	= \$	-
130670	Temporary Reinforced Silt Fence	LF	= \$	-
141000	Temporary Fence (Type ESA)	LF	= \$	-
<i>Subtotal Environmental Mitigation</i>				\$ -

5B - LANDSCAPE AND IRRIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
20XXXX	Highway Planting	LS 1 x	50,000.00 = \$	50,000
20XXXX	Irrigation System	LS 1 x	50,000.00 = \$	50,000
204099	Plant Establishment Work	LS x	= \$	-
204101	Extend Plant Establishment Work	LS x	= \$	-
20XXXX	Follow-up Landscape Project	LS x	= \$	-
150685	Remove Irrigation Facility	LS x	= \$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS x	= \$	-
206400	Check and Test Existing Irrigation Facilities	LS x	= \$	-
21011X	Imported Topsoil (X)	CY/TON x	= \$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	SQFT/SQYD x	= \$	-
200122	Weed Germination	SQYD x	= \$	-
208304	Water Meter	EA x	= \$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF x	= \$	-
20890X	EXTEND A CONDUIT (USE FOR EXTENSION OF IRRIGATION X-OVERS)	LF x	= \$	-
<i>Subtotal Landscape and Irrigation</i>				\$ 100,000

5C - EROSION CONTROL

Item code	Unit	Quantity	Unit Price (\$)	Cost
210010	Move In/Move Out (Erosion Control)	EA 20 x	\$ 1,100.00 = \$	22,000
210350	Fiber Rolls	LF 20000 x	\$ 2.00 = \$	40,000
210360	Compost Sock	LF x	= \$	-
2102XX	Rolled Erosion Control Product (X)	SQFT x	= \$	-
21025X	Bonded Fiber Matrix	SQFT/ACRE x	= \$	-
210300	Hydromulch	SQFT x	= \$	-
210420	Straw	SQFT x	= \$	-
210430	Hydroseed	SQFT 650000 x	\$ 0.10 = \$	65,000
210600	Compost	SQFT x	= \$	-
210630	Incorporate Materials	SQFT x	= \$	-
<i>Subtotal Erosion Control</i>				\$ 127,000

5D - NPDES

Item code	Unit	Quantity	Unit Price (\$)	Cost
130300	Prepare SWPPP	LS 1 x	15,000.00 = \$	15,000
130200	Prepare WPCP	LS x	= \$	-
130100	Job Site Management	LS 1 x	22,000.00 = \$	22,000
130330	Storm Water Annual Report	EA 1 x	2,000.00 = \$	2,000
130310	Rain Event Action Plan (REAP)	EA x	= \$	-
130320	Storm Water Sampling and Analysis Day	EA x	= \$	-
130520	Temporary Hydraulic Mulch	SQYD 36,000 x	0.50 = \$	18,000
130550	Temporary Hydroseed	SQYD x	= \$	-
130505	Move-In/Move-Out (Temporary Erosion Control)	EA 10 x	1,100.00 = \$	11,000
130640	Temporary Fiber Roll	LF 20,000 x	2.00 = \$	40,000
130900	Temporary Concrete Washout	LS 1 x	5,000.00 = \$	5,000
130710	Temporary Construction Entrance	EA 1 x	5,000.00 = \$	5,000
130610	Temporary Check Dam	LF x	= \$	-
130620	Temporary Drainage Inlet Protection	EA x	= \$	-
130730	Street Sweeping	LS 1 x	29,000.00 = \$	29,000
<i>Subtotal NPDES</i>				\$ 147,000

TOTAL ENVIRONMENTAL	\$ 374,000
----------------------------	-------------------

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS x	= \$	-
066596	Additional Water Pollution Control**	LS 1 x	10,000.00 = \$	10,000
066597	Storm Water Sampling and Analysis***	LS x	= \$	-
XXXXXX	Some Item	LS x	= \$	-
<i>Subtotal Supplemental Work for NDPS</i>				\$ 10,000

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code	Unit	Quantity		Unit Price (\$)	=	Cost
860460	Lighting and Sign Illumination	LS	1	x	200,000.00	= \$ 200,000
860201	Signal and Lighting	LS	1	x	500,000.00	= \$ 500,000
860990	Closed Circuit Television System	LS		x		= \$ -
86110X	Ramp Metering System (Location X)	LS	1	x	150,000.00	= \$ 150,000
86070X	Interconnection Conduit and Cable	LF/LS		x		= \$ -
5602XX	Furnish Sign Structure (Type X)	LB	200,000	x	4.00	= \$ 800,000
5602XX	Install Sign Structure (Type X)	LB	200,000	x	0.50	= \$ 100,000
498040	XX" CIDHC Pile (Sign Foundation)	LF	200	x	1,000.00	= \$ 200,000
86080X	Inductive Loop Detectors	EA/LS		x		= \$ -
8609XX	Traffic Monitoring Station (Type X)	LS		x		= \$ -
15075X	Remove Sign Structure	EA/LS		x		= \$ -
151581	Reconstruct Sign Structure	EA		x		= \$ -
152641	Modify Sign Structure	EA		x		= \$ -
860090	Maintain Existing Traffic Management System Elements During Construction	LS		x		= \$ -
86XXXX	Fiber Optic Conduit System	LS	1	x	2,000,000.00	= \$ 2,000,000
XXXXX	Some Item	LS		x		= \$ -
Subtotal Traffic Electrical						\$ 3,950,000

6B - Traffic Signing and Striping

Item code	Unit	Quantity		Unit Price (\$)	=	Cost
566011	Roadside Sign - One Post	EA	50	x	200.00	= \$ 10,000
566012	Roadside Sign - Two Post	EA	5	x	450.00	= \$ 2,250
5602XX	Furnish Sign	SQFT	650	x	10.00	= \$ 6,500
568016	Install Sign Panel on Existing Frame	SQFT		x		= \$ -
150711	Remove Painted Traffic Stripe	LF		x		= \$ -
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF		x		= \$ -
150712	Remove Painted Pavement Marking	SQFT		x		= \$ -
150742	Remove Roadside Sign	EA		x		= \$ -
152320	Reset Roadside Sign	EA		x		= \$ -
152390	Relocate Roadside Sign	EA		x		= \$ -
82010X	Delineator (Class X)	EA		x		= \$ -
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF		x		= \$ -
846012	Thermoplastic Crosswalk and Pavement Marking (Enhanced Wet Night Visibility)	SQFT		x		= \$ -
120090	Construction Area Signs	LS	1	x	20,000.00	= \$ 20,000
84XXXX	Permanent Pavement Delineation	LS	1	x	56,000.00	= \$ 56,000
Subtotal Traffic Signing and Striping						\$ 94,750

6C - Traffic Management Plan

Item code	Unit	Quantity		Unit Price (\$)	=	Cost
12865X	Portable Changeable Message Signs	LS	1	x	\$ 17,000	= \$ 17,000
Subtotal Traffic Management Plan						\$ 17,000

6C - Stage Construction and Traffic Handling

Item code	Unit	Quantity		Unit Price (\$)	=	Cost
120199	Traffic Plastic Drum	EA		x		= \$ -
12016X	Channelizer (Type X)	EA		x		= \$ -
120120	Type III Barricade	EA		x		= \$ -
129100	Temporary Crash Cushion Module	EA		x		= \$ -
120100	Traffic Control System	LS	1	x	\$ 250,000.00	= \$ 250,000
129110	Temporary Crash Cushion	EA	150	x	\$ 250.00	= \$ 37,500
129000	Temporary Railing (Type K)	LF	5,000	x	\$ 20.00	= \$ 100,000
120149	Temporary Pavement Marking (Paint)	SQFT	20,000	x	\$ 5.00	= \$ 100,000
82010X	Delineator (Class X)	EA		x		= \$ -
XXXXXX	Some Item	Unit		x		= \$ -
Subtotal Stage Construction and Traffic Handling						\$ 487,500

TOTAL TRAFFIC ITEMS	\$ 4,549,300
----------------------------	---------------------

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code	Unit	Quantity	Unit Price (\$)	Cost
190101	Roadway Excavation	CY	x	= \$ -
19801X	Imported Borrow	CY/TON	x	= \$ -
390132	Hot Mix Asphalt (Type A)	TON	x	= \$ -
26020X	Class 2 Aggregate Base	TON/CY	x	= \$ -
250401	Class 4 Aggregate Subbase	CY	x	= \$ -
130620	Temporary Drainage Inlet Protection	EA	x	= \$ -
129000	Temporary Railing (Type K)	LF	x	= \$ -
128601	Temporary Signal System	LS	x	= \$ -
120149	Temporary Pavement Marking (Paint)	SQFT	x	= \$ -
80010X	Temporary Fence (Type X)	LF	x	= \$ -
XXXXXX	Some Item	Unit	x	= \$ -
TOTAL DETOURS				\$ -

SUBTOTAL SECTIONS 1 through 7 \$ 14,224,700

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items	ADA Items	0.0%	\$	-
8B - Bike Path Items	Bike Path Items	0.0%	\$	-
8C - Other Minor Items	Other Minor Items	5.0%	\$	711,235
Total of Section 1-7		\$ 14,224,700	x 5.0%	= \$ 711,235
TOTAL MINOR ITEMS				\$ 711,300

SECTIONS 9: MOBILIZATION

Item code				
999990	Total Section 1-8	\$ 14,936,000	x 8%	= \$ 1,194,880
TOTAL MOBILIZATION				\$ 1,194,900

SECTION 10: SUPPLEMENTAL WORK

Item code	Unit	Quantity	Unit Price (\$)	Cost
066670	Payment Adjustments For Price Index Fluctuations	LS	1 x 109,800	= \$ 109,800
066094	Value Analysis	LS	1 x 10,000	= \$ 10,000
066070	Maintain Traffic	LS	1 x 219,000	= \$ 219,000
066919	Dispute Resolution Board	LS	1 x 15,000	= \$ 15,000
066921	Dispute Resolution Advisor	LS	x	= \$ -
066015	Federal Trainee Program	LS	x	= \$ -
066610	Partnering	LS	1 x 50,000	= \$ 50,000
066204	Remove Rock and Debris	LS	x	= \$ -
066222	Locate Existing Crossover	LS	x	= \$ -
XXXXXX	Some Item	Unit	x	= \$ -
Cost of NPDES Supplemental Work specified in Section 5D				= \$ 10,000
Total Section 1-8		\$ 14,936,000	5%	= \$ 746,800
TOTAL SUPPLEMENTAL WORK				\$ 1,160,600

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code	Unit	Quantity	Unit Price (\$)	Cost
066105 Resident Engineers Office	LS	1	x 136,600.00	= \$136,600
066063 Traffic Management Plan - Public Information	LS		x	= \$0
066901 Water Expenses	LS		x	= \$0
8609XX Traffic Monitoring Station (X)	LS		x	= \$0
066841 Traffic Controller Assembly	LS		x	= \$0
066840 Traffic Signal Controller Assembly	LS		x	= \$0
066062 COZEEP Contract	LS	1	x 200,000.00	= \$200,000
066838 Reflective Numbers and Edge Sealer	LS		x	= \$0
066065 Tow Truck Service Patrol	LS		x	= \$0
066916 Annual Construction General Permit Fee	LS	2	x 2,088.00	= \$4,176
XXXXXX Some Item	Unit		x	= \$0
Total Section 1-8		\$ 14,936,000	4%	= \$ 597,440
TOTAL STATE FURNISHED				\$938,300

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization \$16,283,500 (used to calculate TRO)
 Total Construction Cost (excluding TRO and Contingency) \$19,699,800 (used to check if project is greater than \$5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **6%**

Item code	Unit	Quantity	Unit Price (\$)	Cost
070018 Time-Related Overhead	WD	180	X \$5,428	= \$977,100
TOTAL TIME-RELATED OVERHEAD				\$977,100

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-12	\$	19,206,900	x	25%	=	\$4,801,725
TOTAL CONTINGENCY						\$4,801,800

**PROJECT
PLANNING COST ESTIMATE**

EA: 10-1G760

EA: 10-1G760 PID: 1017000160

PID: 1017000160

District-County-Route: 10-SJ-120

PM: R0.5/R1.8

Type of Estimate : Project Study Report / Project Design Study (PSR-PDS)

Program Code : 20.xx.400.100 - Locally Generated Funds

Project Limits : 10-SJ-120; PM R0.5-R1.8

Project Description: Interchange Capacity Improvements

Reconfigure the westbound SR 120 on and off-ramps from a tight diamond configuration (Type L-1) to a loop on-ramp, diagonal on-

Scope : ramp, and diagonal off-ramp configuration (Type L-9). Will include traffic signals, and ramp metering, widen local roads with sidewalks and Class III bike lanes.

Alternative : Alternative 2 - Westbound SR 120 Type L-9

SUMMARY OF PROJECT COST ESTIMATE

	<u>Current Year Cost</u>	<u>Escalated Cost</u>
TOTAL ROADWAY COST	\$ 27,672,500	\$ 31,642,628
TOTAL STRUCTURES COST	\$ 1,470,000	\$ 1,680,898
SUBTOTAL CONSTRUCTION COST	\$ 29,142,500	\$ 33,323,527
TOTAL RIGHT OF WAY COST	\$ 7,180,000	\$ 8,330,000
TOTAL CAPITAL OUTLAY COSTS	\$ 36,323,000	\$ 41,654,000
PR/ED	\$ 1,100,000	\$ 1,100,000
PS&E	\$ 2,320,000	\$ 2,320,000
RIGHT OF WAY	\$ 80,000	\$ 80,000
CONSTRUCTION SUPPORT	\$ 2,850,000	\$ 2,850,000
ENVIRONMENTAL MITIGATION	\$ -	\$ -
TOTAL SUPPORT COST	\$ 6,350,000	\$ 6,350,000

TOTAL PROJECT COST	\$ 42,700,000	\$ 48,050,000
---------------------------	----------------------	----------------------

If Project has been programmed enter Programmed Amount

Date of Estimate (Month/Year) February / 2019

Estimated Construction Start (Month/Year) August / 2022

Number of Working Days = 180

Estimated Mid-Point of Construction (Month/Year) June / 2023

Estimated Construction End (Month/Year) September / 2024

Number of Plant Establishment Days

Estimated Project Schedule

PID Approval November-18
 PA/ED Approval December-20
 PS&E February-22
 RTL April-22
 Begin Construction August-22

Reviewed by District O.E. or Cost Estimate Certifier: Matt Magaw Matt Magaw 6/18/2018 (916) 403 5743

Office Engineer / Cost Estimate Certifier Date Phone

Approved by Project Manager: Aaron Silva Aaron Silva 6/18/2018 (916) 381-9100

Project Manager Date Phone

I. ROADWAY ITEMS SUMMARY

	Section	Cost
1	Earthwork	\$ 4,618,100
2	Pavement Structural Section	\$ 5,240,300
3	Drainage	\$ 500,000
4	Specialty Items	\$ 730,000
5	Environmental	\$ 399,000
6	Traffic Items	\$ 4,743,000
7	Detours	\$ -
8	Minor Items	\$ 811,600
9	Roadway Mobilization	\$ 1,704,200
10	Supplemental Work	\$ 1,265,900
11	State Furnished	\$ 1,022,500.00
12	Time-Related Overhead	\$ 1,103,400.00
13	Roadway Contingency	\$ 5,534,500.00
TOTAL ROADWAY ITEMS		\$ 27,672,500

Estimate Prepared By :	Matt Magaw, MT Project Engineer	2/18/2019	(916) 403 5743
	Name and Title	Date	Phone

Estimate Reviewed By :	Aaron Silva, MT Project Manager	2/18/2019	(916) 381 9100
	Name and Title	Date	Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price (\$)		Cost
190101	Roadway Excavation	CY	30,000	x	35.00	= \$	1,050,000
19010X	Roadway Excavation (Type X) ADL	CY		x		= \$	-
194001	Ditch Excavation	CY		x		= \$	-
198010	Imported Borrow	CY	130,000	x	25.00	= \$	3,250,000
192037	Structure Excavation (Retaining Wall)	CY	1,481	x	85.00	= \$	125,885
193013	Structure Backfill (Retaining Wall)	CY	1,022	x	100.00	= \$	102,200
193031	Pervious Backfill Material (Retaining Wall)	CY		x		= \$	-
160100	Clearing & Grubbing	LS	1	x	60,000.00	= \$	60,000
170101	Develop Water Supply	LS	1	x	30,000.00	= \$	30,000
210130	Duff	ACRE		x		= \$	-
XXXXXX	Some Item	Unit					-

TOTAL EARTHWORK SECTION ITEMS	\$ 4,618,100
--------------------------------------	---------------------

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price (\$)		Cost
401050	Jointed Plain Concrete Pavement	CY		x		= \$	-
400050	Continuously Reinforced Concrete Pavement	CY		x		= \$	-
404092	Seal Pavement Joint	LF		x		= \$	-
404093	Seal Isolation Joint	LF		x		= \$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		= \$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		= \$	-
280010	Rapid Strength Concrete Base	CY		x		= \$	-
410095	Dowel Bar (Drill and Bond)	EA		x		= \$	-
390132	Hot Mix Asphalt (Type A)	TON	18,000	x	110.00	= \$	1,980,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	12,000	x	110.00	= \$	1,320,000
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		= \$	-
26020X	Class 2 Aggregate Base	CY	18,000	x	85.00	= \$	1,530,000
290201	Asphalt Treated Permeable Base	CY		x		= \$	-
250401	Class 4 Aggregate Subbase	CY		x		= \$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		= \$	-
397005	Tack Coat	TON		x		= \$	-
377501	Slurry Seal	TON		x		= \$	-
3750XX	Screenings (Type XX)	TON		x		= \$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		= \$	-
370001	Sand Cover (Seal)	TON		x		= \$	-
730010	Minor Concrete (Curb)	LF	2,000	x	40.00	= \$	80,000
731530	Minor Concrete (Textured Paving)	CY	280	x	600.00	= \$	168,000
731502	Minor Concrete (Miscellaneous Construction)	CY	250	x	500.00	= \$	125,000
39407X	Place Hot Mix Asphalt Dike (Type X)	LF	4,000	x	2.00	= \$	8,000
150771	Remove Asphalt Concrete Dike	LF		x		= \$	-
420201	Grind Existing Concrete Pavement	SQYD		x		= \$	-
150860	Remove Base and Surfacing	CY		x		= \$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		= \$	-
15312X	Remove Concrete	LF/CY/LS		x		= \$	-
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD	75	x	36.00	= \$	2,700
153103	Cold Plane Asphalt Concrete Pavement	SQYD	13,300	x	2.00	= \$	26,600
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		= \$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		= \$	-
420102	Groove Existing Concrete Pavement	SQYD		x		= \$	-
390136	Minor Hot Mix Asphalt	TON		x		= \$	-
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		= \$	-
XXXXXX	Some Item	Unit		x		= \$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS	\$ 5,240,300
--	---------------------

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price (\$)		Cost
15080X	Remove Culvert	EA/LF	x	=	\$		-
150820	Modify Inlet	EA	x	=	\$		-
155232	Sand Backfill	CY	x	=	\$		-
15020X	Abandon Culvert	EA/LF	x	=	\$		-
152430	Adjust Inlet	LF	x	=	\$		-
155003	Cap Inlet	EA	x	=	\$		-
510501	Minor Concrete	CY	x	=	\$		-
510502	Minor Concrete (Minor Structure)	CY	x	=	\$		-
5105XX	Minor Concrete (Type XX)	CY	x	=	\$		-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF	x	=	\$		-
6411XX	XX" Plastic Pipe	LF	x	=	\$		-
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF	x	=	\$		-
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF	x	=	\$		-
68XXXX	XX" Plastic Pipe (Edge Drain)	LF	x	=	\$		-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Thic	LF	x	=	\$		-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF	x	=	\$		-
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF	x	=	\$		-
7050XX	XX" Steel Flared End Section	EA	x	=	\$		-
703233	Grated Line Drain	LF	x	=	\$		-
72XXXX	Rock Slope Protection (Type and Method)	CY/TON	x	=	\$		-
72901X	Rock Slope Protection Fabric (Class X)	SQYD	x	=	\$		-
721420	Concrete (Ditch Lining)	CY	x	=	\$		-
721430	Concrete (Channel Lining)	CY	x	=	\$		-
750001	Miscellaneous Iron and Steel	LB	x	=	\$		-
XXXXXX	Additional Drainage	LS	1	x	500,000.00	= \$	500,000

TOTAL DRAINAGE ITEMS	\$	500,000
-----------------------------	-----------	----------------

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price (\$)		Cost
080050	Progress Schedule (Critical Path Method)	LS	1	x	25,000.00	= \$	25,000
582001	Sound Wall (Masonry Block)	SQFT	x	=	\$		-
510530	Minor Concrete (Wall)	CY	x	=	\$		-
15325X	Remove Sound Wall	LF/LS	x	=	\$		-
070030	Lead Compliance Plan	LS	1	x	5,000.00	= \$	5,000
141120	Treated Wood Waste	LB	x	=	\$		-
153221	Remove Concrete Barrier	LF	x	=	\$		-
150662	Remove Metal Beam Guard Railing	LF	x	=	\$		-
150668	Remove Flared End Section	EA	x	=	\$		-
8000XX	Chain Link Fence (Type XX)	LF	x	=	\$		-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA	x	=	\$		-
832001	Metal Beam Guard Railing	LF	x	=	\$		-
839301	Single Thrie Beam Barrier	LF	x	=	\$		-
839310	Double Thrie Beam Barrier	LF	x	=	\$		-
839521	Cable Railing	LF	x	=	\$		-
8395XX	Terminal System (Type CAT)	EA	x	=	\$		-
839585	Alternative Flared Terminal System	EA	x	=	\$		-
839584	Alternative In-line Terminal System	EA	x	=	\$		-
4906XX	CIDH Concrete Piling (Insert Diameter)	LF	x	=	\$		-
839XXX	Crash Cushion (Insert Type)	EA	x	=	\$		-
83XXXX	Concrete Barrier (Insert Type)	LF	x	=	\$		-
520XXX	Retaining Wall	LS	1	x	500,000.00	= \$	500,000
510060	Structural Concrete, Retaining Wall	CY	x	=	\$		-
513553	Retaining Wall (Masonry Wall)	SQFT	x	=	\$		-
511035	Architectural Treatment	SQFT	x	=	\$		-
598001	Anti-Graffiti Coating	SQFT	x	=	\$		-
203070	Rock Stain	SQFT	x	=	\$		-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT	x	=	\$		-
83954X	Transition Railing (Type X)	EA	x	=	\$		-
597601	Prepare and Stain Concrete	SQFT	x	=	\$		-
839561	Rail Tensioning Assembly	EA	x	=	\$		-
83958X	End Anchor Assembly (Type X)	EA	x	=	\$		-
XXXXXX	Some Specialty Items	LS	1	x	200,000.00	= \$	200,000

TOTAL SPECIALTY ITEMS	\$	730,000
------------------------------	-----------	----------------

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
	LS	x	= \$	-
130670	Temporary Reinforced Silt Fence	LF	= \$	-
141000	Temporary Fence (Type ESA)	LF	= \$	-
<i>Subtotal Environmental Mitigation</i>				<i>\$ -</i>

5B - LANDSCAPE AND IRRIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
20XXXX	Highway Planting	1 x	50,000.00 = \$	50,000
20XXXX	Irrigation System	1 x	50,000.00 = \$	50,000
204099	Plant Establishment Work	LS	= \$	-
204101	Extend Plant Establishment Work	LS	= \$	-
20XXXX	Follow-up Landscape Project	LS	= \$	-
150685	Remove Irrigation Facility	LS	= \$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS	= \$	-
206400	Check and Test Existing Irrigation Facilities	LS	= \$	-
21011X	Imported Topsoil (X)	CY/TON	= \$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	SQFT/SQYD	= \$	-
200122	Weed Germination	SQYD	= \$	-
208304	Water Meter	EA	= \$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF	= \$	-
20890X	EXTEND A CONDUIT (USE FOR EXTENSION OF IRRIGATION X-OVERS)	LF	= \$	-
<i>Subtotal Landscape and Irrigation</i>				<i>\$ 100,000</i>

5C - EROSION CONTROL

Item code	Unit	Quantity	Unit Price (\$)	Cost
210010	Move In/Move Out (Erosion Control)	EA	x	= \$ -
210350	Fiber Rolls	1 x	\$ 50,000.00 = \$	50,000
210360	Compost Sock	LF	= \$	-
2102XX	Rolled Erosion Control Product (X)	SQFT	= \$	-
21025X	Bonded Fiber Matrix	SQFT/ACRE	= \$	-
210300	Hydromulch	SQFT	= \$	-
210420	Straw	SQFT	= \$	-
210430	Hydroseed	1 x	\$ 60,000.00 = \$	60,000
210600	Compost	1 x	\$ 40,000.00 = \$	40,000
210630	Incorporate Materials	SQFT	= \$	-
<i>Subtotal Erosion Control</i>				<i>\$ 150,000</i>

5D - NPDES

Item code	Unit	Quantity	Unit Price (\$)	Cost
130300	Prepare SWPPP	1 x	15,000.00 = \$	15,000
130200	Prepare WPCP	LS	= \$	-
130100	Job Site Management	1 x	22,000.00 = \$	22,000
130330	Storm Water Annual Report	EA	1 x 2,000.00 = \$	2,000
130310	Rain Event Action Plan (REAP)	EA	x	= \$ -
130320	Storm Water Sampling and Analysis Day	EA	x	= \$ -
130520	Temporary Hydraulic Mulch	1 x	20,000.00 = \$	20,000
130550	Temporary Hydroseed	SQYD	= \$	-
130505	Move-In/Move-Out (Temporary Erosion Control)	EA	10 x 1,100.00 = \$	11,000
130640	Temporary Fiber Roll	LS	1 x 40,000.00 = \$	40,000
130900	Temporary Concrete Washout	LS	1 x 5,000.00 = \$	5,000
130710	Temporary Construction Entrance	EA	1 x 5,000.00 = \$	5,000
130610	Temporary Check Dam	LF	x	= \$ -
130620	Temporary Drainage Inlet Protection	EA	x	= \$ -
130730	Street Sweeping	LS	1 x 29,000.00 = \$	29,000
<i>Subtotal NPDES</i>				<i>\$ 149,000</i>

TOTAL ENVIRONMENTAL	\$	399,000
----------------------------	-----------	----------------

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS	x	= \$ -
066596	Additional Water Pollution Control**	LS	1 x	10,000.00 = \$ 10,000
066597	Storm Water Sampling and Analysis***	LS	x	= \$ -
XXXXXX	Some Item	LS	x	= \$ -
<i>Subtotal Supplemental Work for NDPS</i>				<i>\$ 10,000</i>

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code	Unit	Quantity	Unit Price (\$)	Cost
860460 Lighting and Sign Illumination	LS	1	x 200,000.00 = \$	200,000
860201 Signal and Lighting	LS	1	x 500,000.00 = \$	500,000
860990 Closed Circuit Television System	LS		x = \$	-
86110X Ramp Metering System (Location X)	LS	1	x 150,000.00 = \$	150,000
86070X Interconnection Conduit and Cable	LF/LS		x = \$	-
5602XX Furnish Sign Structure (Type X)	LS	1	x 800,000.00 = \$	800,000
5602XX Install Sign Structure (Type X)	LS	1	x 200,000.00 = \$	200,000
498040 XX" CIDHC Pile (Sign Foundation)	LS	1	x 200,000.00 = \$	200,000
86080X Inductive Loop Detectors	EA/LS		x = \$	-
8609XX Traffic Monitoring Station (Type X)	LS		x = \$	-
15075X Remove Sign Structure	EA/LS		x = \$	-
151581 Reconstruct Sign Structure	EA		x = \$	-
152641 Modify Sign Structure	EA		x = \$	-
860090 Maintain Existing Traffic Management System Elements During Construction	LS		x = \$	-
86XXXX Fiber Optic Conduit System	LS	1	x 2,000,000.00 = \$	2,000,000
XXXXX Some Item	LS		x = \$	-
<i>Subtotal Traffic Electrical</i>				\$ 4,050,000

6B - Traffic Signing and Striping

Item code	Unit	Quantity	Unit Price (\$)	Cost
566011 Roadside Sign - One Post	LS	1	x 20,000.00 = \$	20,000
566012 Roadside Sign - Two Post	LS	1	x 80,000.00 = \$	80,000
5602XX Furnish Sign	SQFT		x = \$	-
568016 Install Sign Panel on Existing Frame	SQFT		x = \$	-
150711 Remove Painted Traffic Stripe	LF		x = \$	-
141101 Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF		x = \$	-
150712 Remove Painted Pavement Marking	SQFT		x = \$	-
150742 Remove Roadside Sign	EA		x = \$	-
152320 Reset Roadside Sign	EA		x = \$	-
152390 Relocate Roadside Sign	EA		x = \$	-
82010X Delineator (Class X)	EA		x = \$	-
840502 Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF		x = \$	-
846012 Thermoplastic Crosswalk and Pavement Marking (Enhanced Wet Night Visibility)	SQFT		x = \$	-
120090 Construction Area Signs	LS	1	x 20,000.00 = \$	20,000
84XXXX Permanent Pavement Delineation	LS	1	x 56,000.00 = \$	56,000
<i>Subtotal Traffic Signing and Striping</i>				\$ 176,000

6C - Traffic Management Plan

Item code	Unit	Quantity	Unit Price (\$)	Cost
12865X Portable Changeable Message Signs	LS	1	x \$ 17,000 = \$	17,000
<i>Subtotal Traffic Management Plan</i>				\$ 17,000

6C - Stage Construction and Traffic Handling

Item code	Unit	Quantity	Unit Price (\$)	Cost
120199 Traffic Plastic Drum	EA		x = \$	-
12016X Channelizer (Type X)	EA		x = \$	-
120120 Type III Barricade	EA		x = \$	-
129100 Temporary Crash Cushion Module	EA		x = \$	-
120100 Traffic Control System	LS	1	x \$ 500,000.00 = \$	500,000
129110 Temporary Crash Cushion	EA		x = \$	-
129000 Temporary Railing (Type K)	EA		x = \$	-
120149 Temporary Pavement Marking (Paint)	SQFT		x = \$	-
82010X Delineator (Class X)	EA		x = \$	-
XXXXXX Some Item	Unit		x = \$	-
<i>Subtotal Stage Construction and Traffic Handling</i>				\$ 500,000

TOTAL TRAFFIC ITEMS	\$ 4,743,000
----------------------------	---------------------

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code	Unit	Quantity	Unit Price (\$)	Cost
190101 Roadway Excavation	CY	x	= \$	-
19801X Imported Borrow	CY/TON	x	= \$	-
390132 Hot Mix Asphalt (Type A)	TON	x	= \$	-
26020X Class 2 Aggregate Base	TON/CY	x	= \$	-
250401 Class 4 Aggregate Subbase	CY	x	= \$	-
130620 Temporary Drainage Inlet Protection	EA	x	= \$	-
129000 Temporary Railing (Type K)	LF	x	= \$	-
128601 Temporary Signal System	LS	x	= \$	-
120149 Temporary Pavement Marking (Paint)	SQFT	x	= \$	-
80010X Temporary Fence (Type X)	LF	x	= \$	-
XXXXXX Some Item	Unit	x	= \$	-
TOTAL DETOURS				\$ -

SUBTOTAL SECTIONS 1 through 7 \$ 16,230,400

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items				
ADA Items		0.0%	\$	-
8B - Bike Path Items				
Bike Path Items		0.0%	\$	-
8C - Other Minor Items				
Other Minor Items		5.0%	\$	811,520
Total of Section 1-7		\$ 16,230,400	x 5.0%	= \$ 811,520
TOTAL MINOR ITEMS				\$ 811,600

SECTIONS 9: MOBILIZATION

Item code				
999990	Total Section 1-8	\$ 17,042,000	x 10%	= \$ 1,704,200
TOTAL MOBILIZATION				\$ 1,704,200

SECTION 10: SUPPLEMENTAL WORK

Item code	Unit	Quantity	Unit Price (\$)	Cost
066670 Payment Adjustments For Price Index Fluctuations	LS	1	x 109,800	= \$ 109,800
066094 Value Analysis	LS	1	x 10,000	= \$ 10,000
066070 Maintain Traffic	LS	1	x 219,000	= \$ 219,000
066919 Dispute Resolution Board	LS	1	x 15,000	= \$ 15,000
066921 Dispute Resolution Advisor	LS		x	= \$ -
066015 Federal Trainee Program	LS		x	= \$ -
066610 Partnering	LS	1	x 50,000	= \$ 50,000
066204 Remove Rock and Debris	LS		x	= \$ -
066222 Locate Existing Crossover	LS		x	= \$ -
XXXXXX Some Item	Unit		x	= \$ -
<i>Cost of NPDES Supplemental Work specified in Section 5D</i>				<i>= \$ 10,000</i>
Total Section 1-8		\$ 17,042,000	5%	= \$ 852,100
TOTAL SUPPLEMENTAL WORK				\$ 1,265,900

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code	Unit	Quantity	Unit Price (\$)	Cost
066105 Resident Engineers Office	LS	1	x 136,600.00	= \$136,600
066063 Traffic Management Plan - Public Information	LS		x	= \$0
066901 Water Expenses	LS		x	= \$0
8609XX Traffic Monitoring Station (X)	LS		x	= \$0
066841 Traffic Controller Assembly	LS		x	= \$0
066840 Traffic Signal Controller Assembly	LS		x	= \$0
066062 COZEEP Contract	LS	1	x 200,000.00	= \$200,000
066838 Reflective Numbers and Edge Sealer	LS		x	= \$0
066065 Tow Truck Service Patrol	LS		x	= \$0
066916 Annual Construction General Permit Fee	LS	2	x 2,088.00	= \$4,176
XXXXXX Some Item	Unit		x	= \$0
Total Section 1-8		\$ 17,042,000	4%	= \$ 681,680
TOTAL STATE FURNISHED				\$1,022,500

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization \$18,389,500 (used to calculate TRO)
 Total Construction Cost (excluding TRO and Contingency) \$22,504,600 (used to check if project is greater than \$5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **6%**

Item code	Unit	Quantity	Unit Price (\$)	Cost
070018 Time-Related Overhead	WD	180	X \$6,130	= \$1,103,400
TOTAL TIME-RELATED OVERHEAD				\$1,103,400

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-12	\$	22,138,000	x	25%	=	\$5,534,500
TOTAL CONTINGENCY						\$5,534,500

**PROJECT
PLANNING COST ESTIMATE**

EA: 10-1G760

EA: 10-1G760 PID: 1017000160

PID: 1017000160

District-County-Route: 10-SJ-120

PM: R0.5/R1.8

Type of Estimate : Project Study Report / Project Design Study (PSR-PDS)

Program Code : 20.xx.400.100 - Locally Generated Funds

Project Limits : 10-SJ-120; PM R0.5-R1.8

Project Description: Interchange Capacity Improvements

Reconfigure the westbound SR 120 on and off-ramps from a tight diamond configuration (Type L-1) to a loop on-ramp, diagonal on-

Scope : ramp, and diagonal off-ramp configuration (Type L-9). Will include traffic signals, and ramp metering, widen local roads with sidewalks and Class III bike lanes.

Alternative : Alternative 3 - Diverging Diamond Interchange

SUMMARY OF PROJECT COST ESTIMATE

	<u>Current Year Cost</u>	<u>Escalated Cost</u>
TOTAL ROADWAY COST	\$ 36,427,500	\$ 41,653,694
TOTAL STRUCTURES COST	\$ -	\$ -
SUBTOTAL CONSTRUCTION COST	\$ 36,427,500	\$ 41,653,694
TOTAL RIGHT OF WAY COST	\$ 14,260,000	\$ 16,550,000
TOTAL CAPITAL OUTLAY COSTS	\$ 50,688,000	\$ 58,204,000
PR/ED	\$ 1,100,000	\$ 1,100,000
PS&E	\$ 2,320,000	\$ 2,320,000
RIGHT OF WAY	\$ 80,000	\$ 80,000
CONSTRUCTION SUPPORT	\$ 2,850,000	\$ 2,850,000
ENVIRONMENTAL MITIGATION	\$ -	\$ -
TOTAL SUPPORT COST	\$ 6,350,000	\$ 6,350,000

TOTAL PROJECT COST	\$ 57,100,000	\$ 64,600,000
---------------------------	----------------------	----------------------

If Project has been programmed enter Programmed Amount

Date of Estimate (Month/Year) February / 2019

Estimated Construction Start (Month/Year) August / 2022

Number of Working Days = 180



Estimated Mid-Point of Construction (Month/Year) June / 2023

Estimated Construction End (Month/Year) September / 2024

Number of Plant Establishment Days

Estimated Project Schedule

PID Approval November-18
 PA/ED Approval December-20
 PS&E February-22
 RTL April-22
 Begin Construction August-22

Reviewed by District O.E. or Cost Estimate Certifier:		Matt Magaw	6/18/2018	(916) 403 5743
	Office Engineer / Cost Estimate Certifier		Date	Phone
Approved by Project Manager:		Aaron Silva	6/18/2018	(916) 381-9100
	Project Manager		Date	Phone

I. ROADWAY ITEMS SUMMARY

	Section	Cost
1	Earthwork	\$ 8,448,100
2	Pavement Structural Section	\$ 6,418,300
3	Drainage	\$ 700,000
4	Specialty Items	\$ 730,000
5	Environmental	\$ 589,000
6	Traffic Items	\$ 4,743,000
7	Detours	\$ -
8	Minor Items	\$ 1,081,500
9	Roadway Mobilization	\$ 2,271,000
10	Supplemental Work	\$ 1,549,300
11	State Furnished	\$ 1,249,200.00
12	Time-Related Overhead	\$ 1,362,600.00
13	Roadway Contingency	\$ 7,285,500.00
TOTAL ROADWAY ITEMS		\$ 36,427,500

Estimate Prepared By : Matt Magaw, MT Project Engineer 2/18/2019 (916) 403 5743
 Name and Title Date Phone

Estimate Reviewed By : Aaron Silva, MT Project Manager 2/18/2019 (916) 381 9100
 Name and Title Date Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price (\$)		Cost
190101	Roadway Excavation	CY	90,000	x	35.00	= \$	3,150,000
19010X	Roadway Excavation (Type X) ADL	CY		x		= \$	-
194001	Ditch Excavation	CY		x		= \$	-
198010	Imported Borrow	CY	200,000	x	25.00	= \$	5,000,000
192037	Structure Excavation (Retaining Wall)	CY	1,481	x	85.00	= \$	125,885
193013	Structure Backfill (Retaining Wall)	CY	1,022	x	100.00	= \$	102,200
193031	Pervious Backfill Material (Retaining Wall)	CY		x		= \$	-
160100	Clearing & Grubbing	LS	1	x	40,000.00	= \$	40,000
170101	Develop Water Supply	LS	1	x	30,000.00	= \$	30,000
210130	Duff	ACRE		x		= \$	-
XXXXXX	Some Item	Unit					-

TOTAL EARTHWORK SECTION ITEMS	\$ 8,448,100
--------------------------------------	---------------------

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price (\$)		Cost
401050	Jointed Plain Concrete Pavement	CY		x		= \$	-
400050	Continuously Reinforced Concrete Pavement	CY		x		= \$	-
404092	Seal Pavement Joint	LF		x		= \$	-
404093	Seal Isolation Joint	LF		x		= \$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		= \$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		= \$	-
280010	Rapid Strength Concrete Base	CY		x		= \$	-
410095	Dowel Bar (Drill and Bond)	EA		x		= \$	-
390132	Hot Mix Asphalt (Type A)	TON	24,000	x	110.00	= \$	2,640,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	12,000	x	110.00	= \$	1,320,000
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		= \$	-
26020X	Class 2 Aggregate Base	CY	24,000	x	85.00	= \$	2,040,000
290201	Asphalt Treated Permeable Base	CY		x		= \$	-
250401	Class 4 Aggregate Subbase	CY		x		= \$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		= \$	-
397005	Tack Coat	TON		x		= \$	-
377501	Slurry Seal	TON		x		= \$	-
3750XX	Screenings (Type XX)	TON		x		= \$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		= \$	-
370001	Sand Cover (Seal)	TON		x		= \$	-
730010	Minor Concrete (Curb)	LF	2,000	x	40.00	= \$	80,000
731530	Minor Concrete (Textured Paving)	CY	280	x	600.00	= \$	168,000
731502	Minor Concrete (Miscellaneous Construction)	CY	250	x	500.00	= \$	125,000
39407X	Place Hot Mix Asphalt Dike (Type X)	LF	8,000	x	2.00	= \$	16,000
150771	Remove Asphalt Concrete Dike	LF		x		= \$	-
420201	Grind Existing Concrete Pavement	SQYD		x		= \$	-
150860	Remove Base and Surfacing	CY		x		= \$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		= \$	-
15312X	Remove Concrete	LF/CY/LS		x		= \$	-
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD	75	x	36.00	= \$	2,700
153103	Cold Plane Asphalt Concrete Pavement	SQYD	13,300	x	2.00	= \$	26,600
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		= \$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		= \$	-
420102	Groove Existing Concrete Pavement	SQYD		x		= \$	-
390136	Minor Hot Mix Asphalt	TON		x		= \$	-
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		= \$	-
XXXXXX	Some Item	Unit		x		= \$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS	\$ 6,418,300
--	---------------------

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price (\$)		Cost
15080X	Remove Culvert	EA/LF	x	=	\$		-
150820	Modify Inlet	EA	x	=	\$		-
155232	Sand Backfill	CY	x	=	\$		-
15020X	Abandon Culvert	EA/LF	x	=	\$		-
152430	Adjust Inlet	LF	x	=	\$		-
155003	Cap Inlet	EA	x	=	\$		-
510501	Minor Concrete	CY	x	=	\$		-
510502	Minor Concrete (Minor Structure)	CY	x	=	\$		-
5105XX	Minor Concrete (Type XX)	CY	x	=	\$		-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF	x	=	\$		-
6411XX	XX" Plastic Pipe	LF	x	=	\$		-
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF	x	=	\$		-
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF	x	=	\$		-
68XXXX	XX" Plastic Pipe (Edge Drain)	LF	x	=	\$		-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Thick)	LF	x	=	\$		-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF	x	=	\$		-
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF	x	=	\$		-
7050XX	XX" Steel Flared End Section	EA	x	=	\$		-
703233	Grated Line Drain	LF	x	=	\$		-
72XXXX	Rock Slope Protection (Type and Method)	CY/TON	x	=	\$		-
72901X	Rock Slope Protection Fabric (Class X)	SQYD	x	=	\$		-
721420	Concrete (Ditch Lining)	CY	x	=	\$		-
721430	Concrete (Channel Lining)	CY	x	=	\$		-
750001	Miscellaneous Iron and Steel	LB	x	=	\$		-
XXXXXX	Additional Drainage	LS	1	x	700,000.00	= \$	700,000

TOTAL DRAINAGE ITEMS	\$	700,000
-----------------------------	-----------	----------------

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price (\$)		Cost
080050	Progress Schedule (Critical Path Method)	LS	1	x	25,000.00	= \$	25,000
582001	Sound Wall (Masonry Block)	SQFT	x	=	\$		-
510530	Minor Concrete (Wall)	CY	x	=	\$		-
15325X	Remove Sound Wall	LF/LS	x	=	\$		-
070030	Lead Compliance Plan	LS	1	x	5,000.00	= \$	5,000
141120	Treated Wood Waste	LB	x	=	\$		-
153221	Remove Concrete Barrier	LF	x	=	\$		-
150662	Remove Metal Beam Guard Railing	LF	x	=	\$		-
150668	Remove Flared End Section	EA	x	=	\$		-
8000XX	Chain Link Fence (Type XX)	LF	x	=	\$		-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA	x	=	\$		-
832001	Metal Beam Guard Railing	LF	x	=	\$		-
839301	Single Thrie Beam Barrier	LF	x	=	\$		-
839310	Double Thrie Beam Barrier	LF	x	=	\$		-
839521	Cable Railing	LF	x	=	\$		-
8395XX	Terminal System (Type CAT)	EA	x	=	\$		-
839585	Alternative Flared Terminal System	EA	x	=	\$		-
839584	Alternative In-line Terminal System	EA	x	=	\$		-
4906XX	CIDH Concrete Piling (Insert Diameter)	LF	x	=	\$		-
839XXX	Crash Cushion (Insert Type)	EA	x	=	\$		-
83XXXX	Concrete Barrier (Insert Type)	LF	x	=	\$		-
520XXX	Retaining Wall	LS	1	x	500,000.00	= \$	500,000
510060	Structural Concrete, Retaining Wall	CY	x	=	\$		-
513553	Retaining Wall (Masonry Wall)	SQFT	x	=	\$		-
511035	Architectural Treatment	SQFT	x	=	\$		-
598001	Anti-Graffiti Coating	SQFT	x	=	\$		-
203070	Rock Stain	SQFT	x	=	\$		-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT	x	=	\$		-
83954X	Transition Railing (Type X)	EA	x	=	\$		-
597601	Prepare and Stain Concrete	SQFT	x	=	\$		-
839561	Rail Tensioning Assembly	EA	x	=	\$		-
83958X	End Anchor Assembly (Type X)	EA	x	=	\$		-
XXXXXX	Some Specialty Items	LS	1	x	200,000.00	= \$	200,000

TOTAL SPECIALTY ITEMS	\$	730,000
------------------------------	-----------	----------------

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
	LS	x	= \$	-
130670	Temporary Reinforced Silt Fence	LF	= \$	-
141000	Temporary Fence (Type ESA)	LF	= \$	-
<i>Subtotal Environmental Mitigation</i>				\$ -

5B - LANDSCAPE AND IRRIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
20XXXX	Highway Planting	1 x	50,000.00 = \$	50,000
20XXXX	Irrigation System	1 x	50,000.00 = \$	50,000
204099	Plant Establishment Work	LS	= \$	-
204101	Extend Plant Establishment Work	LS	= \$	-
20XXXX	Follow-up Landscape Project	LS	= \$	-
150685	Remove Irrigation Facility	LS	= \$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS	= \$	-
206400	Check and Test Existing Irrigation Facilities	LS	= \$	-
21011X	Imported Topsoil (X)	CY/TON	= \$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	SQFT/SQYD	= \$	-
200122	Weed Germination	SQYD	= \$	-
208304	Water Meter	EA	= \$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF	= \$	-
20890X	EXTEND A CONDUIT (USE FOR EXTENSION OF IRRIGATION X-OVERS)	LF	= \$	-
<i>Subtotal Landscape and Irrigation</i>				\$ 100,000

5C - EROSION CONTROL

Item code	Unit	Quantity	Unit Price (\$)	Cost
210010	Move In/Move Out (Erosion Control)	EA	x = \$	-
210350	Fiber Rolls	1 x	\$ 100,000.00 = \$	100,000
210360	Compost Sock	LF	= \$	-
2102XX	Rolled Erosion Control Product (X)	SQFT	= \$	-
21025X	Bonded Fiber Matrix	SQFT/ACRE	= \$	-
210300	Hydromulch	SQFT	= \$	-
210420	Straw	SQFT	= \$	-
210430	Hydroseed	1 x	\$ 120,000.00 = \$	120,000
210600	Compost	1 x	\$ 80,000.00 = \$	80,000
210630	Incorporate Materials	SQFT	= \$	-
<i>Subtotal Erosion Control</i>				\$ 300,000

5D - NPDES

Item code	Unit	Quantity	Unit Price (\$)	Cost
130300	Prepare SWPPP	1 x	15,000.00 = \$	15,000
130200	Prepare WPCP	LS	= \$	-
130100	Job Site Management	1 x	22,000.00 = \$	22,000
130330	Storm Water Annual Report	EA	1 x 2,000.00 = \$	2,000
130310	Rain Event Action Plan (REAP)	EA	x = \$	-
130320	Storm Water Sampling and Analysis Day	EA	x = \$	-
130520	Temporary Hydraulic Mulch	1 x	20,000.00 = \$	20,000
130550	Temporary Hydroseed	SQYD	= \$	-
130505	Move-In/Move-Out (Temporary Erosion Control)	EA	10 x 1,100.00 = \$	11,000
130640	Temporary Fiber Roll	1 x	80,000.00 = \$	80,000
130900	Temporary Concrete Washout	1 x	5,000.00 = \$	5,000
130710	Temporary Construction Entrance	1 x	5,000.00 = \$	5,000
130610	Temporary Check Dam	LF	= \$	-
130620	Temporary Drainage Inlet Protection	EA	= \$	-
130730	Street Sweeping	1 x	29,000.00 = \$	29,000
<i>Subtotal NPDES</i>				\$ 189,000

TOTAL ENVIRONMENTAL	\$ 589,000
----------------------------	-------------------

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS	x = \$	-
066596	Additional Water Pollution Control**	1 x	10,000.00 = \$	10,000
066597	Storm Water Sampling and Analysis***	LS	= \$	-
XXXXXX	Some Item	LS	= \$	-
<i>Subtotal Supplemental Work for NDPS</i>				\$ 10,000

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code	Unit	Quantity	Unit Price (\$)	Cost
860460 Lighting and Sign Illumination	LS	1 x	200,000.00 = \$	200,000
860201 Signal and Lighting	LS	1 x	500,000.00 = \$	500,000
860990 Closed Circuit Television System	LS	x	= \$	-
86110X Ramp Metering System (Location X)	LS	1 x	150,000.00 = \$	150,000
86070X Interconnection Conduit and Cable	LF/LS	x	= \$	-
5602XX Furnish Sign Structure (Type X)	LS	1 x	800,000.00 = \$	800,000
5602XX Install Sign Structure (Type X)	LS	1 x	200,000.00 = \$	200,000
498040 XX" CIDHC Pile (Sign Foundation)	LS	1 x	200,000.00 = \$	200,000
86080X Inductive Loop Detectors	EA/LS	x	= \$	-
8609XX Traffic Monitoring Station (Type X)	LS	x	= \$	-
15075X Remove Sign Structure	EA/LS	x	= \$	-
151581 Reconstruct Sign Structure	EA	x	= \$	-
152641 Modify Sign Structure	EA	x	= \$	-
860090 Maintain Existing Traffic Management System Elements During Construction	LS	x	= \$	-
86XXXX Fiber Optic Conduit System	LS	1 x	2,000,000.00 = \$	2,000,000
XXXXX Some Item	LS	x	= \$	-
Subtotal Traffic Electrical				\$ 4,050,000

6B - Traffic Signing and Striping

Item code	Unit	Quantity	Unit Price (\$)	Cost
566011 Roadside Sign - One Post	LS	1 x	20,000.00 = \$	20,000
566012 Roadside Sign - Two Post	LS	1 x	80,000.00 = \$	80,000
5602XX Furnish Sign	SQFT	x	= \$	-
568016 Install Sign Panel on Existing Frame	SQFT	x	= \$	-
150711 Remove Painted Traffic Stripe	LF	x	= \$	-
141101 Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF	x	= \$	-
150712 Remove Painted Pavement Marking	SQFT	x	= \$	-
150742 Remove Roadside Sign	EA	x	= \$	-
152320 Reset Roadside Sign	EA	x	= \$	-
152390 Relocate Roadside Sign	EA	x	= \$	-
82010X Delineator (Class X)	EA	x	= \$	-
840502 Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF	x	= \$	-
846012 Thermoplastic Crosswalk and Pavement Marking (Enhanced Wet Night Visibility)	SQFT	x	= \$	-
120090 Construction Area Signs	LS	1 x	20,000.00 = \$	20,000
84XXXX Permanent Pavement Delineation	LS	1 x	56,000.00 = \$	56,000
Subtotal Traffic Signing and Striping				\$ 176,000

6C - Traffic Management Plan

Item code	Unit	Quantity	Unit Price (\$)	Cost
12865X Portable Changeable Message Signs	LS	1 x	\$ 17,000 = \$	17,000
Subtotal Traffic Management Plan				\$ 17,000

6C - Stage Construction and Traffic Handling

Item code	Unit	Quantity	Unit Price (\$)	Cost
120199 Traffic Plastic Drum	EA	x	= \$	-
12016X Channelizer (Type X)	EA	x	= \$	-
120120 Type III Barricade	EA	x	= \$	-
129100 Temporary Crash Cushion Module	EA	x	= \$	-
120100 Traffic Control System	LS	1 x	\$ 500,000.00 = \$	500,000
129110 Temporary Crash Cushion	EA	x	= \$	-
129000 Temporary Railing (Type K)	EA	x	= \$	-
120149 Temporary Pavement Marking (Paint)	SQFT	x	= \$	-
82010X Delineator (Class X)	EA	x	= \$	-
XXXXXX Some Item	Unit	x	= \$	-
Subtotal Stage Construction and Traffic Handling				\$ 500,000

TOTAL TRAFFIC ITEMS	\$ 4,743,000
----------------------------	---------------------

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code	Unit	Quantity	Unit Price (\$)	Cost
190101 Roadway Excavation	CY	x	= \$	-
19801X Imported Borrow	CY/TON	x	= \$	-
390132 Hot Mix Asphalt (Type A)	TON	x	= \$	-
26020X Class 2 Aggregate Base	TON/CY	x	= \$	-
250401 Class 4 Aggregate Subbase	CY	x	= \$	-
130620 Temporary Drainage Inlet Protection	EA	x	= \$	-
129000 Temporary Railing (Type K)	LF	x	= \$	-
128601 Temporary Signal System	LS	x	= \$	-
120149 Temporary Pavement Marking (Paint)	SQFT	x	= \$	-
80010X Temporary Fence (Type X)	LF	x	= \$	-
XXXXXX Some Item	Unit	x	= \$	-

TOTAL DETOURS	\$ -
----------------------	-------------

SUBTOTAL SECTIONS 1 through 7	\$ 21,628,400
-------------------------------	---------------

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items

ADA Items	0.0%	\$	-
-----------	------	----	---

8B - Bike Path Items

Bike Path Items	0.0%	\$	-
-----------------	------	----	---

8C - Other Minor Items

Other Minor Items	5.0%	\$	1,081,420
-------------------	------	----	-----------

Total of Section 1-7	\$ 21,628,400	x	5.0%	=	\$ 1,081,420
----------------------	---------------	---	------	---	--------------

TOTAL MINOR ITEMS	\$ 1,081,500
--------------------------	---------------------

SECTIONS 9: MOBILIZATION

Item code					
999990	Total Section 1-8	\$ 22,709,900	x	10%	= \$ 2,270,990

TOTAL MOBILIZATION	\$ 2,271,000
---------------------------	---------------------

SECTION 10: SUPPLEMENTAL WORK

Item code	Unit	Quantity	Unit Price (\$)	Cost
066670 Payment Adjustments For Price Index Fluctuations	LS	1	x 109,800 = \$	109,800
066094 Value Analysis	LS	1	x 10,000 = \$	10,000
066070 Maintain Traffic	LS	1	x 219,000 = \$	219,000
066919 Dispute Resolution Board	LS	1	x 15,000 = \$	15,000
066921 Dispute Resolution Advisor	LS		x = \$	-
066015 Federal Trainee Program	LS		x = \$	-
066610 Partnering	LS	1	x 50,000 = \$	50,000
066204 Remove Rock and Debris	LS		x = \$	-
066222 Locate Existing Crossover	LS		x = \$	-
XXXXXX Some Item	Unit		x = \$	-

Cost of NPDES Supplemental Work specified in Section 5D	= \$ 10,000
---	-------------

Total Section 1-8	\$ 22,709,900	5%	=	\$ 1,135,495
-------------------	---------------	----	---	--------------

TOTAL SUPPLEMENTAL WORK	\$ 1,549,300
--------------------------------	---------------------

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code	Unit	Quantity	Unit Price (\$)	Cost
066105 Resident Engineers Office	LS	1	x 136,600.00	= \$136,600
066063 Traffic Management Plan - Public Information	LS		x	= \$0
066901 Water Expenses	LS		x	= \$0
8609XX Traffic Monitoring Station (X)	LS		x	= \$0
066841 Traffic Controller Assembly	LS		x	= \$0
066840 Traffic Signal Controller Assembly	LS		x	= \$0
066062 COZEEP Contract	LS	1	x 200,000.00	= \$200,000
066838 Reflective Numbers and Edge Sealer	LS		x	= \$0
066065 Tow Truck Service Patrol	LS		x	= \$0
066916 Annual Construction General Permit Fee	LS	2	x 2,088.00	= \$4,176
XXXXXX Some Item	Unit		x	= \$0
Total Section 1-8		\$ 22,709,900	4%	= \$ 908,396
TOTAL STATE FURNISHED				\$1,249,200

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization \$22,709,900 (used to calculate TRO)
 Total Construction Cost (excluding TRO and Contingency) \$27,779,400 (used to check if project is greater than \$5 million excluding contingency)

Estiamted Time-Related Overhead (TRO) Percentage (0% to 10%) = **6%**

Item code	Unit	Quantity	Unit Price (\$)	Cost
070018 Time-Related Overhead	WD	180	X \$7,570	= \$1,362,600
TOTAL TIME-RELATED OVERHEAD				\$1,362,600

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-12	\$	29,142,000	x	25%	=	\$7,285,500
TOTAL CONTINGENCY						\$7,285,500

II. STRUCTURE ITEMS

DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Name	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Cost Per Square Foot	\$0		\$0		\$0
COST OF EACH	\$0		\$0		\$0

DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Name	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Cost Per Square Foot	\$100		\$0		\$0
COST OF EACH	\$0		\$0		\$0

TOTAL COST OF BRIDGES \$0

TOTAL COST OF BUILDINGS \$0

Structures Mobilization Percentage 10% **\$0**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Structures Contingency Percentage 10% **\$0**

TOTAL COST OF STRUCTURES \$0

Estimate Prepared By: Matt Magaw, MT Project Engineer

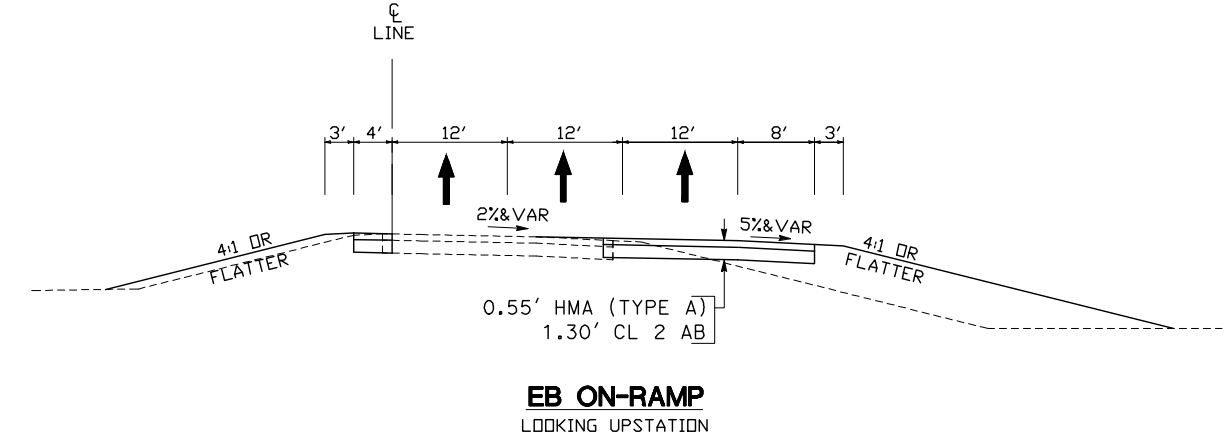
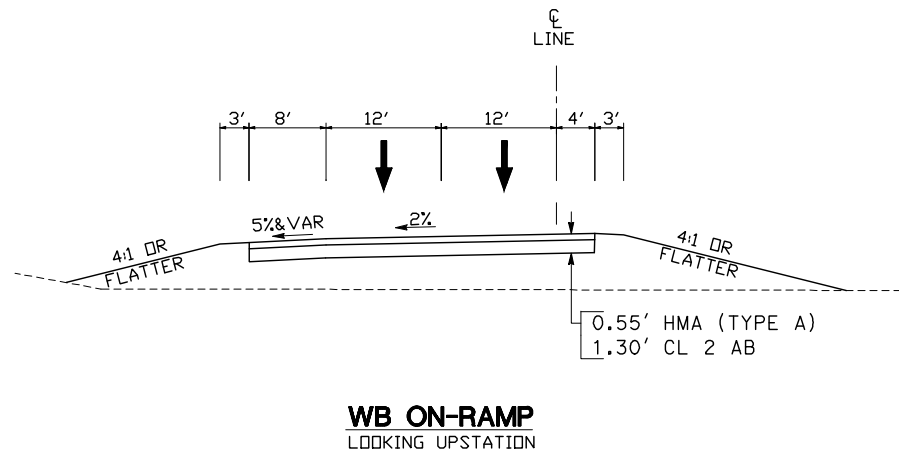
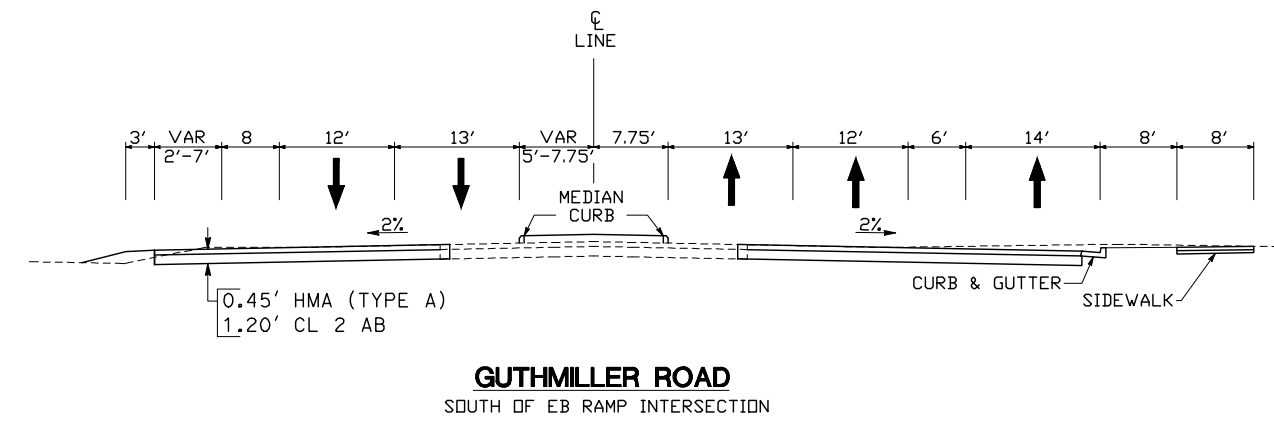
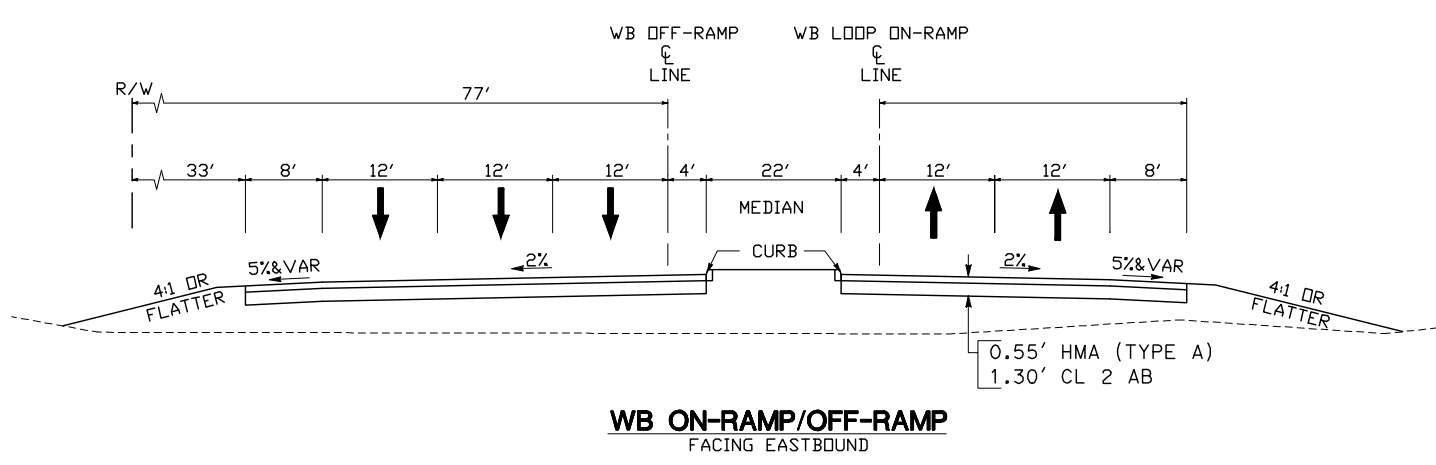
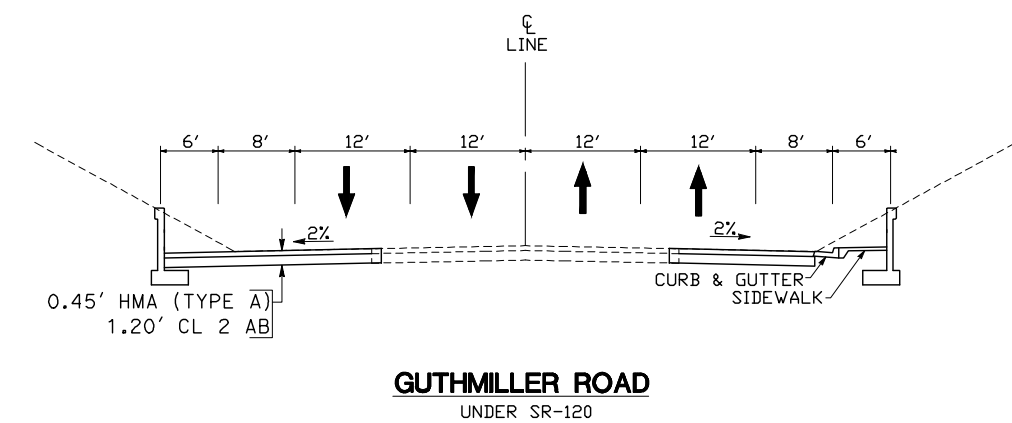
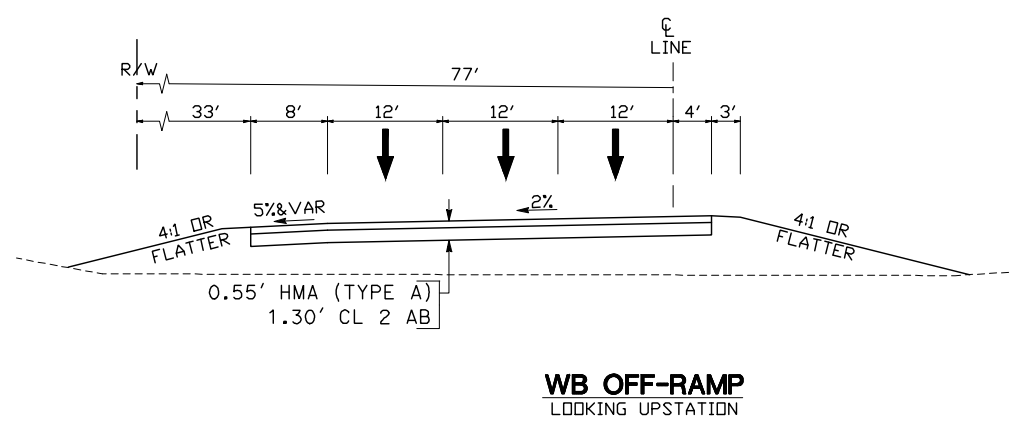
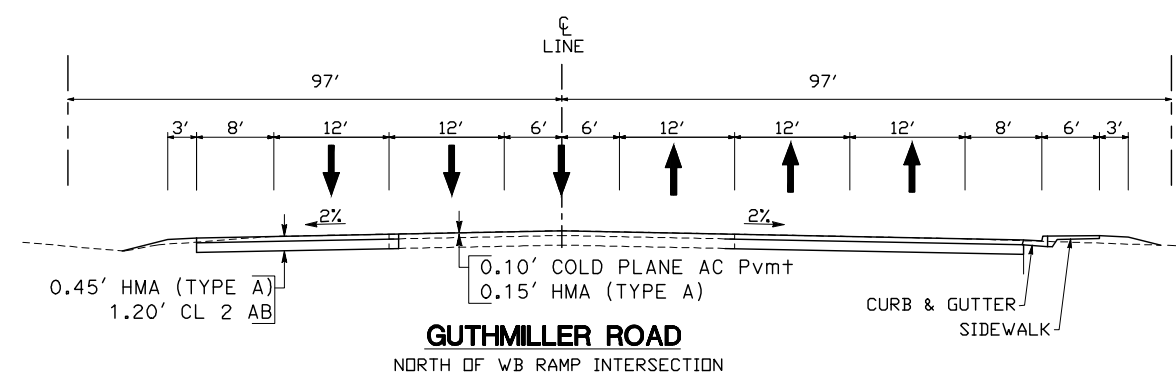
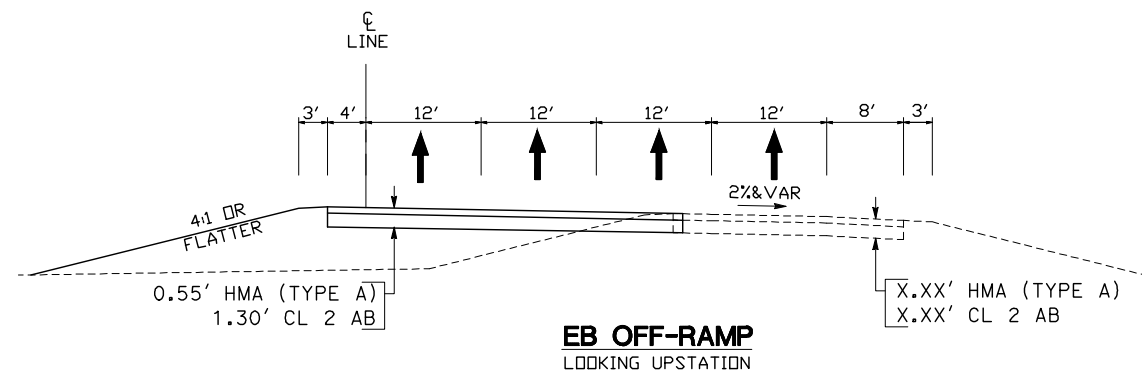
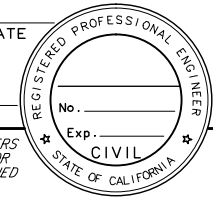
Date: 2/18/2019

Attachment D

Typical Cross Sections

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	0.9/1.8		

REGISTERED CIVIL ENGINEER DATE _____
 PLANS APPROVAL DATE _____
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.
 MARK THOMAS & COMPANY, INC. 7300 FOLSOM BOULEVARD SUITE 203 SACRAMENTO, CA 95826
 CITY OF LATHROP PUBLIC WORKS DEPARTMENT 390 TOWNE CENTER DR. LATHROP, CA 95330



TYPICAL CROSS SECTIONS
NO SCALE
X-1

FOR DESIGN STUDY ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Et-Catrans®
 CONSULTANT FUNCTIONAL SUPERVISOR: X. XXXXXXXX
 CHECKED BY: X. XXXXXXXX
 CALCULATED/DESIGNED BY: X. XXXXXXXX
 REVISOR: X. XXXXXXXX
 DATE REVISOR: X. XXXXXXXX

LAST REVISION DATE PLOTTED => 00-00-00 TIME PLOTTED =>

Attachment E

Preliminary Environmental Analysis Report (PEAR)



Preliminary Environmental Analysis Report

1. Project Information

District:	10	County:	San Joaquin	Route:	120	PM:	1.33
EA:	10-1G760			EFIS Project ID:	10 1700 0160		
Project Title:	SR120/Yosemite Ave Interchange Project						
Project Manager:	Wuthy Seng					Phone #	(209) 948- 7854
Project Engineer:	Aaron Silva (Mark Thomas & Co.)					Phone #	(916) 403-5720
Environmental Office Chief:	Shane Gunn (Acting)					Phone #	(559) 445-6310

2. Project Description

California Department of Transportation (Caltrans), in partnership with the City of Lathrop (the City), proposes to improve the State Route 120 (SR 120)/Yosemite Ave interchange in south Lathrop. The proposed project would reconfigure the westbound SR 120 on and off-ramps from a tight diamond configuration (Type L-1) to a loop on-ramp and diagonal off-ramp configuration (Type L-7), install traffic signals at the ramp terminals to improve traffic operations, widening the eastbound on- and off-ramps; widen Guthmiller Road between the ramp terminals to four 12-foot-wide travel lanes with two 8-foot wide bike lanes and one 6-foot-wide sidewalk; and widening Guthmiller road north of the WB ramp terminals to six 12-foot-wide travel lanes with two 8-foot-wide bike lanes and one 6-foot-wide sidewalk. The proposed loop on-ramp would require widening the West Yosemite Avenue undercrossing (Bridge No. 29-271L). The widening of Guthmiller Road would require installation of retaining walls under the existing SR 120 structures.

Purpose and Need

The purpose of the project is to improve the existing SR 120/Yosemite Ave interchange to accommodate existing and planned traffic in Lathrop. More specifically, the purpose of this project is to:

- Improve local access to SR 120
- Improve regional mobility on SR 120
- Relieve congestion on SR 120, and local roadways during peak hour conditions.

This interchange is a major entry to, and exit from, the southern portion of Lathrop, which is approved for industrial and commercial development. The interchange is a key connector to the areas included in the South Lathrop Specific Plan (SLSP)¹ and the Lathrop Gateway Business Park Specific Plan (Gateway SP)². This interchange also provides access to the Crossroads Industrial Park, which has been approved for approximately 20 years and is partially developed. The City of Lathrop approved the SLSP in 2015, and the Gateway SP in 2011.

The project is needed because traffic generated by planned and approved developments is anticipated to exceed the existing operational capacity of the interchange. The interchange is

¹ SLSP <http://www.ci.lathrop.ca.us/lathrop/cdd/projects/southlathspecplanproject.aspx>

² Gateway SP <http://www.ci.lathrop.ca.us/lathrop/LathropGatewayBusinessParkInformation.aspx>

currently a compact diamond design and is anticipated to degrade to level of service (LOS) "F" (i.e., forced or breakdown flow) under existing plus project conditions.

Description of Work

The proposed project is located in the City of Lathrop, San Joaquin County (see Figure 1 for the project location). The proposed project is anticipated to accommodate forecast year 2045 traffic volumes through the following improvements:

1. Install traffic signals at ramp terminals to provide coordinated signal operation for emergency vehicle access.
2. Replace SR 120 westbound diagonal on-ramp with a loop on-ramp. Loop on-ramp would include two 12-foot-wide lanes with standard shoulders.
3. Reconstruct the westbound diagonal off-ramp to create space for the proposed loop on-ramp. The ramp would be a single lane exit that would expand to accommodate lanes for three turning movements at the ramp terminal (1 left + 2 right).
4. Widen the eastbound off-ramp at the ramp terminal to accommodate lanes for four turning movements (2 left + 2 right).
5. Widen the eastbound on-ramp to a three-lanes (2 mixed-flow + 1 HOV lane). Ramp would include 12-foot-wide lanes, standard shoulders and California Highway Patrol (CHP) enforcement areas
6. Widen Yosemite/Guthmiller Road between ramp terminals to include four to five 12-foot-wide lanes, two 8-foot-wide bike lanes, and one 6-foot-wide sidewalk. Retaining walls would be constructed under the existing SR 120 structures.
7. Widen Yosemite/Guthmiller Road north of WB ramp terminal to include six 12-foot-wide lanes, two 8-foot-wide bike lanes, and one 6-foot-wide sidewalk.

Alternatives

Currently, two (2) project alternatives are identified and described, a build alternative and the no-build alternative. The no build alternative defines the condition if no improvement is made to this facility. The build alternative (proposed ultimate improvements) proposes to install improvements as described in the project description. No other alternatives are identified for further study at this time.

Proposed (ultimate) improvements are shown on Figure 2. The City anticipates construction of the SR 120/Yosemite Ave interchange improvements to begin by 2022 and a completion year of 2024.

Proposed Project Schedule

Milestones	Delivery Date (Month Year)
Begin Environmental	January 2019
Circulate Draft ED	June 2020
PA & ED	July 2020
Begin Design	August 2020
Right of Way Maps	March 2021
PS&E to District Office Engineer	August 2021
Right of Way Certification	October 2021
Ready to List	November 2021
Advertise	January 2022
Award	March 2022
Approve Contract	April 2022
Contract Acceptance	May 2022
Final Report/Start Construction	June 2022
End Project	July 2024

3. Anticipated Environmental Approval³

CEQA

- Categorical Exemption
- Statutory Exemption
- Initial Study/Negative Declaration
- Initial Study/Mitigated Negative Declaration
- Environmental Impact Report (EIR)

NEPA

- Categorical Exclusion
- "Routine" EA/FONSI
- "Complex" EA/FONSI
- Environmental Impact Statement (EIS)

Summary Statement

In order to identify environmental issues, constraints, costs, and resource needs, a Preliminary Environmental Analysis Report (PEAR) was prepared for the project. Potential disposal, staging, and borrow sites would be identified in the Project Approval and Environmental Document (PA&ED) phase for complete environmental review. Field studies were not conducted and technical studies have been deferred to the PA&ED phase. It is anticipated that this project will require an Initial Study/Proposed Mitigated Negative Declaration (IS/MND) to comply with the California Environmental Quality Act (CEQA), with the City of Lathrop serving as CEQA lead agency and that Caltrans would serve as lead agency under the National Environmental Policy Act (NEPA), as assigned by the Federal Highway Administration (FHWA), and a "Routine" Environmental Analysis/Finding of No Significant Impact (EA/FONSI) is assumed. There will be several responsible agencies involved in the project including San Joaquin Council of Governments (SJCOG), FHWA, San Joaquin County, and others. All responsible agencies will be identified and consulted with during the PA&ED phase.

4. Special Environmental Considerations

The proposed project is generally located in a disturbed area and is not expected to require substantial unusual, exceptional or extended environmental processes. Project delivery and scheduling may be affected by funding, regional conformity findings, and federal agency involvement related to consultation under Section 7 of the Endangered Species Act, or alternatively Section 10 of the Endangered Species Act given that the project is located in the coverage area of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Coverage under the SJMSCP would allow an expedited compliance process

³ If the anticipated environmental document is an EIR and/or EIS, the preparation of a standard PEAR is recommended to avoid unanticipated costs and project delays.

with the Endangered Species Act. In addition, project earthwork associated with the build alternative could expose archaeological cultural resources and an extended study and or additional consultations may be required.

Additionally, it is anticipated that the ultimate buildout conditions would require, and would include land acquisition for project implementation. The expected land acquisitions needed for project implementation would not result in the relocation of people or the removal of structures. The cost and level of effort/involvement of ROW acquisition will be determined during PA&ED, with the project assuming appraisal and acquisition of minimal amounts of property. As this will be new state-owned property, the acquisitions will follow the Caltrans ROW acquisition process, and such acquisitions would have to be carried out under the guidance of Caltrans. It is anticipated that ROW would be required from one parcel north of SR-120. Included below is the parcel information.

Proposed ROW Parcel Information

Address	3756 Yosemite Avenue
Assessor Parcel Number (APN)	241-400-06
Land Use/ Assessed Use / (Use Type)	Commercial / Industrial / (Dirt Parking and Storage)
Parcel Size	1,999,404 SF
Required Acquisition (estimated)	304,500 SF
Remainder Of Parcel	1,694,904 SF

5. Anticipated Environmental Commitments

The appropriate level of environmental documentation to be prepared during the PA&ED phase of project development would be an IS/EA leading to a Mitigated Negative Declaration (MND)/ FONSI to comply with both CEQA and NEPA requirements. Preparation of the IS/EA, including technical studies, is anticipated to take approximately 18 months, after receiving information necessary to begin the environmental analysis. This would include time for review by the environmental division staff within Caltrans.

The anticipated environmental commitments for each impacted resource area are described below:

Air Quality

The project is located in San Joaquin County, which is a National Ambient Air Quality Standards (NAAQS) nonattainment area. San Joaquin County has a state designation of nonattainment for ozone, PM10, and PM2.5 and is either unclassified or attainment for all other criteria pollutants. The County has a national designation of nonattainment for ozone and PM2.5. The County is designated either attainment or unclassified for the remaining national standards. While the project includes pedestrian facilities, which are eligible for an exemption under 40 CFR 93.126 from conformity and air quality studies, the overall project is not exempt and an Air Quality Report will be required.

An Air Quality Report must be prepared. A PM Hot Spot memo must be prepared and sent to Interagency Consultation. It is noted that an approval of a NEPA document for this project would require a Project Level Conformity finding issued by FHWA, and in order to obtain this finding the project must be programmed as a Tier 1 project in the SJCOG Regional Transportation Plan (RTP). Currently, the project is programmed/funded through "Environmental Only," with no year for construction or open to traffic cited. The City of Lathrop is currently working with adjacent developers to secure the local funding needed for the construction phase of the project.

Once the funding is known and secure then the City will engage SJCOG to start the process of amending the RTP and FTIP. The amendment will require regional conformity findings to be made prior to approval by SJCOG and FHWA. Once the project is programmed/funded as a Tier 1 project in the RTP and FTIP with a regional conformity finding, it will enable the FHWA to make a project-level conformity finding.

Biological Resources

The project site comprises an existing developed highway interchange, associated paved roadway surfaces, and regularly mowed vegetated areas and does not likely contain critical habitat for special status species. However, the SLSP EIR does identify special-status plant and animal species within close proximity (1-mile) of the Project area⁴. These include:

- California tiger salamander
- Delta button-celery
- riparian brush rabbit
- slough thistle
- Swainson's hawk
- tricolored blackbird
- Wright's trichocoronis
- yellow-headed blackbird

Of these species only the Delta button-celery range is mapped within the project site area.

Additionally, the existing bridge may provide nesting habitat for migratory birds or bat species, as such surveys would be required to determine nesting and or roosting status. Consequently, for the purposes of this PEAR, it is assumed that a Natural Environment Study (NES), and a Biological Assessment (BA) would be required for the project's NEPA compliance, and these studies would be used as the basis for assessment of impacts to biological resources in the IS/MND prepared for CEQA compliance. Depending on the results of the biological studies, the project could require compliance with threatened and endangered species permitting including incidental take permits for state-listed species (CESA). The project site is located within the SJCMSCP area, which is an approved Section 10 HCP administered by SJCOG. If any incidental take permits are warranted, coverage under the SJCMSCP would be an alternative to Section 7 permitting. Such decision would be the discretion of the lead agency. Consultation with the California Department of Fish and Wildlife (CDFW), and the U.S. Fish and Wildlife Service (USFWS) may be required to fully determine project impacts to protected plant and wildlife species and what mitigation would be appropriate.

Cultural Resources

Previous nearby studies⁵ adjacent to the project site have indicated that there are no known cultural resources within the project site, however, there are several resources listed within the vicinity. The Mossdale Wye Site (CA-SJO-3) is the most notable and is located approximately 0.5 mile to the west of the western ramps for the proposed interchange. An area of potential effects (APE) would be established based on the final design/footprint, which is to be determined. A preliminary APE map has been prepared as part of the PEAR process. The Mossdale Wye Site is not located in the preliminary APE map.

⁴ South Lathrop Specific Plan Figure 3.4-3: Special Status Species: 1-Mile Radius. Available at: http://www.ci.lathrop.ca.us/lathrop/cdd/projects/Pdf/slsp_files/23-05-2017_09-52-25-149.pdf

⁵ Draft Environmental Impact Report –South Lathrop Specific Plan (2013)

During the PAED phase, there would be a Historical Property Survey Report/Architectural Survey Report (HPSR/ASR) prepared, which will establish the final APE. At that time the improvement will be analyzed relative to all recorded and surveyed sites. At this point based on the cultural study (including records searches) for the SLSP and the Gateway projects, it is not anticipated that there is a site at the interchange location, however, a full survey and report will be prepared in PAED to confirm. As with all ground disturbing activities there is a potential to uncover a previously undiscovered cultural or archeological resource. If such an instance occurred the proposed project will rely on the mitigation measures and best practices.

Energy and Climate Change

The proposed project is not considered a major project for the consumption of energy during project construction or operation; therefore, an energy report is not required. However, the project is a congestion relief and capacity increasing project and would require a quantitative analysis for CO² emissions in a technical memo. The study, which would be required during later phases of the project, would be used as the basis for assessment of impacts in the IS/MND prepared for CEQA compliance.

Floodplain and Runoff

The project site is located within an area designated as Zone X (LEVEE) Areas protected by levees from the 1% annual chance (100-year) flood. Risks associated with flooding would be low. However, the project is partially located within the 200-year floodplain as defined by the Central Valley Flood Protection Board (CVFPB).

Generally, projects involving 1.0 acre or more of disturbed soil area (DSA) are required to obtain coverage under Construction General NPDES Permit Number CAS000002 (CGP). Projects with a construction contract administered by local agencies disturbing less than 1.0 acres of soil on Caltrans property are covered by Caltrans Statewide Municipal Separate Stormwater Sewer System (MS4) NPDES Permit Number CAS000003 (Caltrans' Statewide MS4 NPDES). The portions of this project not on Caltrans property are governed by the local agency MS4.

If this project is determined to need CGP compliance, the Local Agency Construction Representative will be required to upload a CGP Stormwater Pollution Prevention Plan into the State Water Resources Control Boards on-line SMARTS database.

Impacts to water quality and storm water runoff are potentially present for the project considering the presence of roadside ditches in the project area, and the project's proximity to water sources, including the San Joaquin River. The proposed project would implement structural best management practices (BMPs) which include compliance with the City's Storm Water Master Plan (SWMP), and the City's adopted Storm Water Ordinance, which includes construction standards, and design review guidelines to reduce contaminants in stormwater runoff. A Storm Water Data Report, will be prepared during PA&ED. Additionally, a floodplain evaluation for potential impacts to 200-year flood conditions would be required during the CEQA process.

Noise

The project is likely a Type 1 project as defined by Title 23 CFR 772.5(h). The project involves reconfigured on and off ramps, and capacity increasing features. Because of the project's classification as a Type 1 project, a Noise Study Report (NSR) is anticipated. If the NSR identifies noise impacts that require the consideration of noise abatement, a Noise Abatement Decision Report (NADR) would also be required.

Visual Resources

Revised April 2011

Reconfiguration of the existing interchange, and roadway improvements would introduce changes to the visual character of the project site and its surroundings. The Visual Impact Assessment Questionnaire indicates that the project's visual impacts would be negligible and could be addressed in a brief technical memorandum.

Hazardous Materials

Previous hazards assessments of the project area including site reconnaissance, interviews, historical land use research, and database research were conducted in 2013 as part of the preparation of the SLSP Daft EIR. The assessments revealed no evidence of historical or existing recognized environmental conditions including the presence or likely presence of hazardous substances or petroleum products in, on, or at the property. In addition, the plan area is not located on a site that has been included on the Cortese List pursuant to Government Code Section 65962.5.

However, soils adjacent to paved areas within the proposed project corridor may contain aerially deposited lead (ADL) from vehicle exhaust. Areas within the project corridor where soil may be disturbed during construction should be tested for ADL according to Caltrans ADL testing guidelines. Asbestos, lead and other heavy metals such as chromium may be present within materials and paint markings on the pavement. These materials should be tested for lead-based paint and asbestos containing materials according to Caltrans guidelines prior to removal. Therefore, it is anticipated that a Preliminary Site Investigation for aerially deposited lead, lead-based paint and asbestos containing materials will be required.

6. Permits and Approvals

Water Quality: Interchange improvements are likely to utilize Caltrans' National Pollutant Discharge Elimination System (NPDES) permit during construction, and would require preparation and adoption of a Storm Water Pollution Prevention Program (SWPPP).

Cultural Resources: Interchange improvements that would require excavation activities outside of the existing paved surfaces and previously disturbed areas, may have the potential to impact cultural resources. Consultation and coordination with Native American tribal representatives would be required as part of preparing the cultural resources technical studies during the PA&ED phase, pursuant to AB 52 and Section 106 of the NHPA.

Biological Resources: The project would require compliance with threatened and endangered species permitting including incidental take permits for state-listed species (CESA). The project site is located within the SJCMSCP area, which is an approved Section 10 HCP administered by SJCOG. If any incidental take permits are warranted, coverage under the SJCMSCP would be an alternative to Section 7 permitting. Such decision would be the discretion of the lead agency. Consultation with the CDFW, and the USFWS may be required to fully determine project impacts to protected plant and wildlife species and what mitigation would be appropriate.

7. Level of Effort: Risks and Assumptions

Assumptions

- Construction impacts would not extend beyond the area shown in current build alternative APE.
- It is assumed that all soil from the construction site would be reused on the site and would not be exported

- No jurisdictional wetlands are expected to be present.
- It is assumed that only informal consultation with the USFWS will be necessary, and section 10 compliance can be obtained through coverage under the SJCMSCP, which is an approved Section 10 HCP administered by SJCOG
- It is assumed that consultation and coordination will be necessary with CDFW, and RWQCB, and SJVAPCD.
- Hazardous waste impacts can be minimized or avoided through compliance with local, State, and federal regulations.
- The project would result in no significant and unavoidable environmental effects under CEQA and NEPA. Therefore, the environmental finding would be a MND/FONSI supported by an IS/EA.
- It is not anticipated that a Health Risk Assessment (HRA) is warranted for this project.
- There are documented prehistoric sites located approximately ½ mile to the west of the westernmost portion of the interchange. The proposed interchange is located east of I-5 approximately ½ mile from the site and it not anticipated to extend into the preliminary APE.
- The project site comprises a developed highway interchange, associated paved roadway surfaces, and regularly mowed vegetated areas and does not likely contain critical habitat for special status species.

Risks

- If current scope of work increases, the project will need to be reevaluated for potential further impacts to resources. A preliminary APE map has been developed at this stage in the project (Attachment C). Should scope or design changes occur, the APE would be revisited, with unknown effects on project impacts. The Air Quality Report would require a Project Level Conformity finding issued by FHWA. It is noted that in order to obtain this conformity finding the project must be programmed as a Tier 1 project in the SJCOG Regional Transportation Plan (RTP). Currently, the project is programmed/funded through "Environmental Only," with no year for construction or open to traffic date cited. Once the project is programmed/funded as a Tier 1 project in the RTP and FTIP with a regional conformity finding, it will enable the FHWA to make a project-level conformity finding. Delays in securing local funding, or in amending the RTP/FTIP could delay the ability to make the project-level conformity finding, which would delay the completion of the PA&ED phase of the project.
- While the proposed interchange is not immediately adjacent to the San Joaquin River, which is often associated with prehistoric sites in the region, it is located within approximately ¾ of a mile of this river and there will be a risk of uncovering previously unknown and undocumented sites.

- If a special status species were to be found, delays in the schedule could be required for additional surveys or consultation with regulatory agencies. Compensatory mitigation could be required if special status species were found, which would add additional cost. If formal Section 7 consultation were to be required, it would add time to the schedule and the project would require the preparation and submission of a biological assessment in order to obtain a Biological Opinion from the USFWS.

8. PEAR Technical Summaries

- 8.1 Land Use: No land use changes would be required and due to the proposed project scope of work and the location, it is anticipated that there would be no impact on local land use. No additional reports would be required.
- 8.2 Growth: The purpose of the proposed project is to improve traffic operations and accommodate planned growth. Due to the proposed scope of work, the project is not anticipated to cause either direct or indirect growth-related impacts. It is anticipated that no growth impacts would need to be addressed within a technical study.
- 8.3 Farmlands/Timberlands: The project would not convert farmlands or timberlands to another use or otherwise affect farmlands or timberlands. The identified area of potential affect is not within lands protected under Williamson Act Contracts or located within an agricultural preserve. No additional reports would be required.
- 8.4 Community Impacts: It is anticipated that no permanent impacts to communities will need to be addressed within a technical study. Temporary construction related impacts to traffic and circulation will be investigated by Traffic Safety during PA&ED studies.
- 8.5 Visual/Aesthetics: SR 120 is not listed as a Scenic Highway, or an eligible Scenic Highway. Construction activities would result in temporary visual effects (e.g., construction equipment, signage, dust, etc.) within the project study area. However, these would be temporary and generally short in duration. No additional reports would be required.
- 8.6 Cultural Resources: An initial archaeological screening for the study area determined that there are no recorded prehistoric or historic archeological sites in the APE, however there are known resources within approximately 0.5 mile of the project APE. An ASR would be prepared for the project. A HPSR will be required, as the HPSR will combine information for both built resources and archaeology identification and evaluation efforts.
- 8.7 Hydrology and Floodplain: The project site is located within an area designated as Zone X (LEVEE) Areas protected by levees from the 1% annual chance (100-year) flood. Risks associated with flooding would be low. However, the project is partially located within the 200-year floodplain as defined by the CVFPB. A floodplain evaluation for potential impacts to 200-year flood conditions would be required during the CEQA process.

- 8.8 Water Quality and Storm Water Runoff: Generally, projects involving 1.0 acre or more of disturbed soil area (DSA) soil are required to obtain coverage under Construction General NPDES Permit Number CAS000002 (CGP). Projects with construction contract administered by local agencies disturbing less than 1.0 acres of soil on Caltrans property are covered by Caltrans Statewide Municipal Separate Stormwater Sewer System (MS4) NPDES Permit Number CAS000003 (Caltrans' Statewide MS4 NPDES). The portions of this project not on Caltrans property are governed by the local agency MS4. The proposed project would result in a minimal increase in the amount of impervious surfaces that would generate additional storm water runoff. The realignment of roadways and freeway ramps may slightly alter the roadway finished grades. However, the overall flow pattern is expected to remain the same. Post construction runoff is expected to remain similar to existing conditions. Storm water generated from the site would drain to the City's storm sewer system. The anticipated downstream effects would be minimal. A Storm Water Data Report will be prepared during PA&ED.
- 8.9 Geology, Soils, Seismic and Topography: The site is situated in flat terrain. Geotechnical Study and compliance would be establish the design criteria.
- 8.10 Paleontology: It is anticipated that no permanent impacts will need to be addressed in the technical studies.
- 8.11 Hazardous Waste/Materials: It is anticipated that excavation and earth moving activities will be necessary during construction. A Phase I Initial Site Assessment (ISA) will be required to assess the potential presence of contaminated soils for ADL, lead-based paint and asbestos containing materials.
- 8.12 Air Quality: The project is located in a NAAQS nonattainment area for ozone, PM10, and PM2.5. The County has a national designation of nonattainment for ozone and PM2.5. An Air Quality Report, and a project-level conformity analysis will be required.
- 8.13 Noise and Vibration: Because of the project's classification as a Type 1 project, a NSR is anticipated. If the NSR identifies noise impacts that require the consideration of noise abatement, a NADR would also be required.
- 8.14 Energy and Climate Change: Greenhouse gas emissions will be analyzed in the Air Quality Analysis. A brief analysis of the emissions will be provided following Caltrans guidelines. A technical energy report will not be required.
- 8.15 Biological Environment: A NES, and a BA would be required for the project's NEPA compliance, and these studies would be used as the basis for assessment of impacts to biological resources in the IS/MND prepared for CEQA compliance. The project would require compliance with threatened and endangered species permitting including incidental take permits for state-listed species (CESA). The project site is located within the SJCMSCP area, which is an approved Section 10 HCP administered by SJCOG. Informal

Consultation with the CDFW, and the USFWS may be required to fully determine project impacts to protected plant and wildlife species and what mitigation would be appropriate.

- 8.16 Cumulative Impacts: The proposed project would improve an existing interchange and associated frontage street intersections to improve traffic operations through design year 2045. As a result, the long-term project improvements are not expected to make a significant contribution to cumulative effects. Any project-related cumulative impacts resulting from the proposed project, combined with other projects in the vicinity, will be evaluated in the environmental document.
- 8.17 Context Sensitive Solutions: During the subsequent environmental phases of the project, appropriate opportunities for public involvement will be provided including public review of the draft environmental documents, and opportunities for public meetings with the City of Lathrop. No additional reports would be required.

9. Summary Statement for PSR or PSR-PDS

The anticipated environmental document for the proposed project is an Initial Study with Mitigated Negative Declaration/Routine Environmental Assessment with FONSI. The California Department of Transportation (Caltrans) will serve as the NEPA lead agency under its assumption of responsibility pursuant to 23 U.S. Code 327. The estimated time to obtain approval is approximately 18 months after receiving information necessary to begin the environmental analysis.

It is anticipated multiple environmental studies and reports will be required for this project including: Archaeological Survey Report, Historic Property Survey Report, Natural Environment Study (NES), and a Biological Assessment (BA) with Section 7 informal consultation with the U.S. Fish and Wildlife Service (USFWS), An Air Quality Report, Storm Water Data Report, Noise Abatement Decision Report (NADR) and Site Investigation for aerially deposited lead, lead-based paint and asbestos containing materials.

Disclaimer

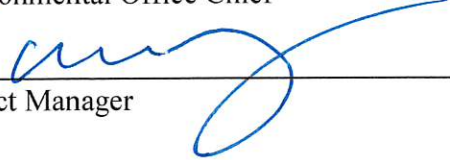
This report is not an environmental document or determination. The above information and recommendations are based on the project description provided in this report. The discussion and conclusions provided by this PEAR are approximate and based on a cursory review of existing records, databases, and mapping tools to estimate the potential for probable environmental effects. The purpose of this report is to provide a preliminary level of environmental analysis to support the Project Initiation Document. Changes in project scope, alternatives, existing environmental conditions, and/or environmental laws or regulations will require a re-evaluation of this report.

Approval



Environmental Office Chief

Date: 11/15/18



Project Manager

Date: 11/15/18

Headquarters Coordinator’s Preliminary Class of Action Concurrence has been obtained (e-mail concurrence is attached)—required for environmental documents only and not CEs.

FIGURES:

- Figure 1: Regional Vicinity Map**
- Figure 2: Proposed Improvements**

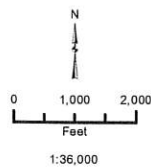
ATTACHMENTS:

- Attachment A: PEAR Environmental Studies Checklist**
- Attachment B: GANTT Schedule**
- Attachment C: Preliminary APE Map**



Legend

- City of Lathrop
- City of Manteca
- School
- Park



SR120/YOSEMITE AVENUE INTERCHANGE PROJECT

Figure 1. Project Vicinity

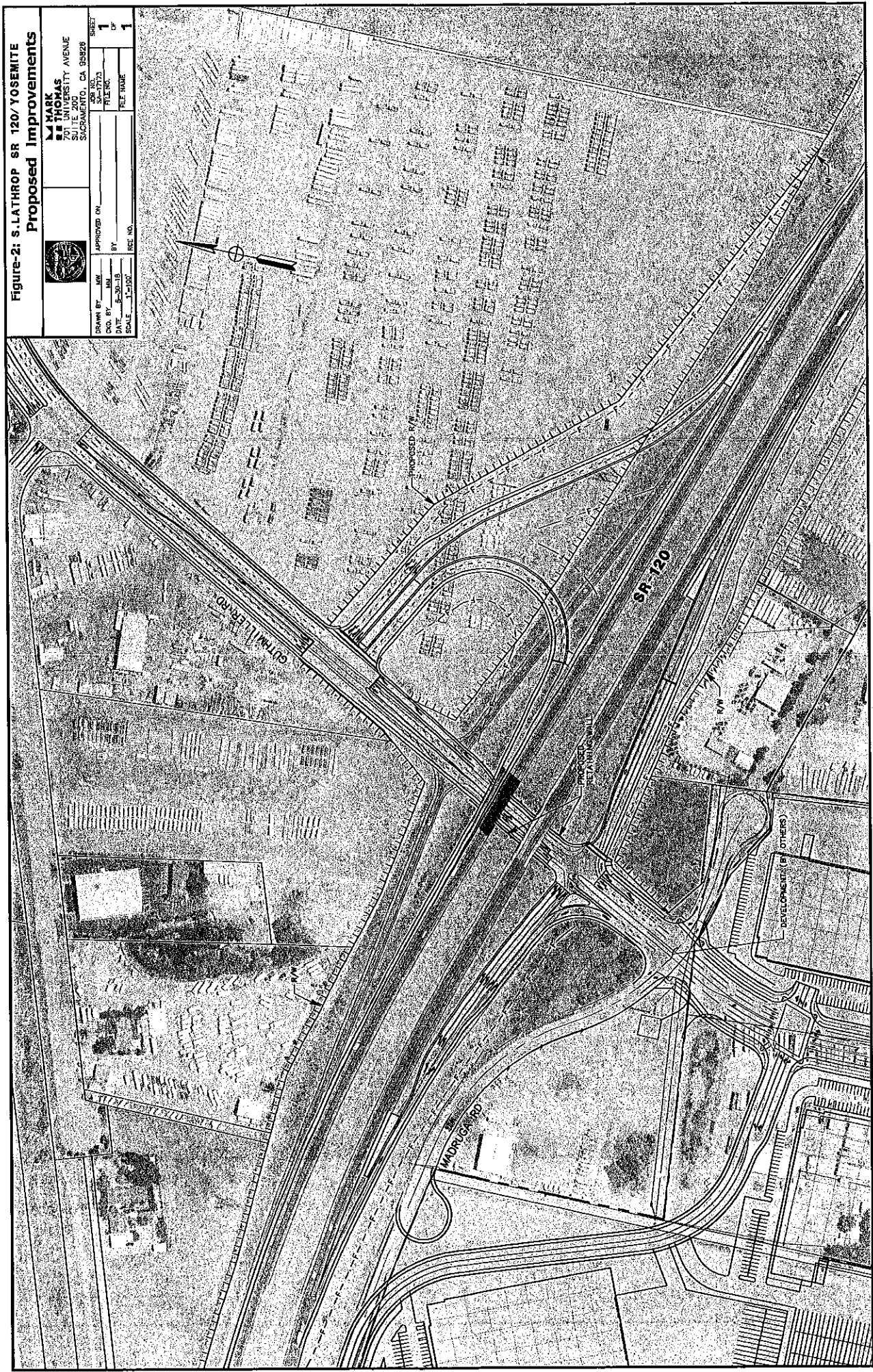
Source: San Joaquin County GIS, Bing Maps Image
 Service: Google Earth Map Date: May 10, 2017.

Figure-2: S.LATHROP SR 120/YOSEMITE
Proposed Improvements



MARK THOMAS
ENGINEERING
207 UNIVERSITY AVENUE
SACRAMENTO, CA 95828

DRAWN BY: <u> </u>	APPROVED ON: <u> </u>	SHEET NO. <u>1</u>
NO. BY: <u> </u>	BY: <u> </u>	OF <u>1</u>
SCALE: <u>1"=100'</u>	FILE NO. <u> </u>	FILE NAME <u> </u>



Attachment A: PEAR Environmental Studies Checklist
Project ID: 1017000160
EA No: 10-1G760

Rev. 08/2018

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Land Use	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Wild and Scenic River Consistency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Coastal Management Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Growth	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Farmlands/Timberlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Community Impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	Project features require the acquisition of property outside of the state right-of-way
Community Character and Cohesion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Relocations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Environmental Justice	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Utilities/Emergency Services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Visual/Aesthetics	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Cultural Resources:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>M</u>	Project features would require a Historic Properties Survey Report/Archaeological Study Report (HPSR/ASR) to be prepared during the PA&ED phase. Additionally tribal coordination would be required and summarized in report.
Archaeological Survey Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>M</u>	
Historic Resources Evaluation Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Historic Property Survey Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	
Historic Resource Compliance Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Section 106 / PRC 5024 & 5024.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Native American Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	Onset of ED per AB-52
Finding of Effect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	
Data Recovery Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Memorandum of Agreement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Hydrology and Floodplain	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	Addressed in CEQA doc per SB 5
Water Quality and Stormwater Runoff	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	Temporary and permanent Best Management Practices (BMPs) that are required to comply

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
					with the permit would be presented in the Storm Water Data Report
Geology, Soils, Seismic and Topography	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	To be done through Design
Paleontology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
PER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
PMP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Hazardous Waste/Materials:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	Where soil may be disturbed during construction should be tested for ADL according to Ca/trans ADL testing guidelines.
ISA (Additional)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
PSI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Air Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>M</u>	Air Quality Report will be required. PM Hot Spot analysis (memo) prepared and sent to Interagency Consultation. The Air Quality Report will require a Project Level Conformity finding issued by FHWA
Noise and Vibration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	Noise Study Report (NSR) is anticipated.
Energy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Climate Change and Sea Level Rise	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	An appropriate greenhouse gas emissions analysis should be prepared as part of the environmental document
Biological Environment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>M</u>	
Fish Passage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Wildlife Connectivity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>L</u>	
Natural Environment Study	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>M</u>	
Biological Assessment Section 7:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>L</u>	Section 7 compliance and approvals from the U.S. Fish and Wildlife Service (USFWS) may be required if federally

Environmental Studies for PA&ED Checklist

	Not anticipated	Memo to file	Report required	Risk*			Comments
				L	M	H	
							protected special-status species are affected.
Formal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
Informal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	L		
No effect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	L		
Section 10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	L		
USFWS Consultation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	L		
NMFS Consultation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	L		
Species of Concern (CNPS, USFS, BLM, S, F)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L			
Wetlands & Other Waters/Delineation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
404(b)(1) Alternatives Analysis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
Invasive Species	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
HMMP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	L		
CDFW Consistency Determination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	L		
2081	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	L		
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	L		
Cumulative Impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L	L		
Context Sensitive Solutions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L			Implemented during PAED through coordination with project team and during ED public review opportunities.
Section 4(f) Evaluation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
Permits:							
401 Certification Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
404 Permit Coordination, IP, NWP, or LOP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
1602 Agreement Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
Local Coastal Development Permit Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
State Coastal Development Permit Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
NPDES Coordination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L			
TRPA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			
BCDC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L			

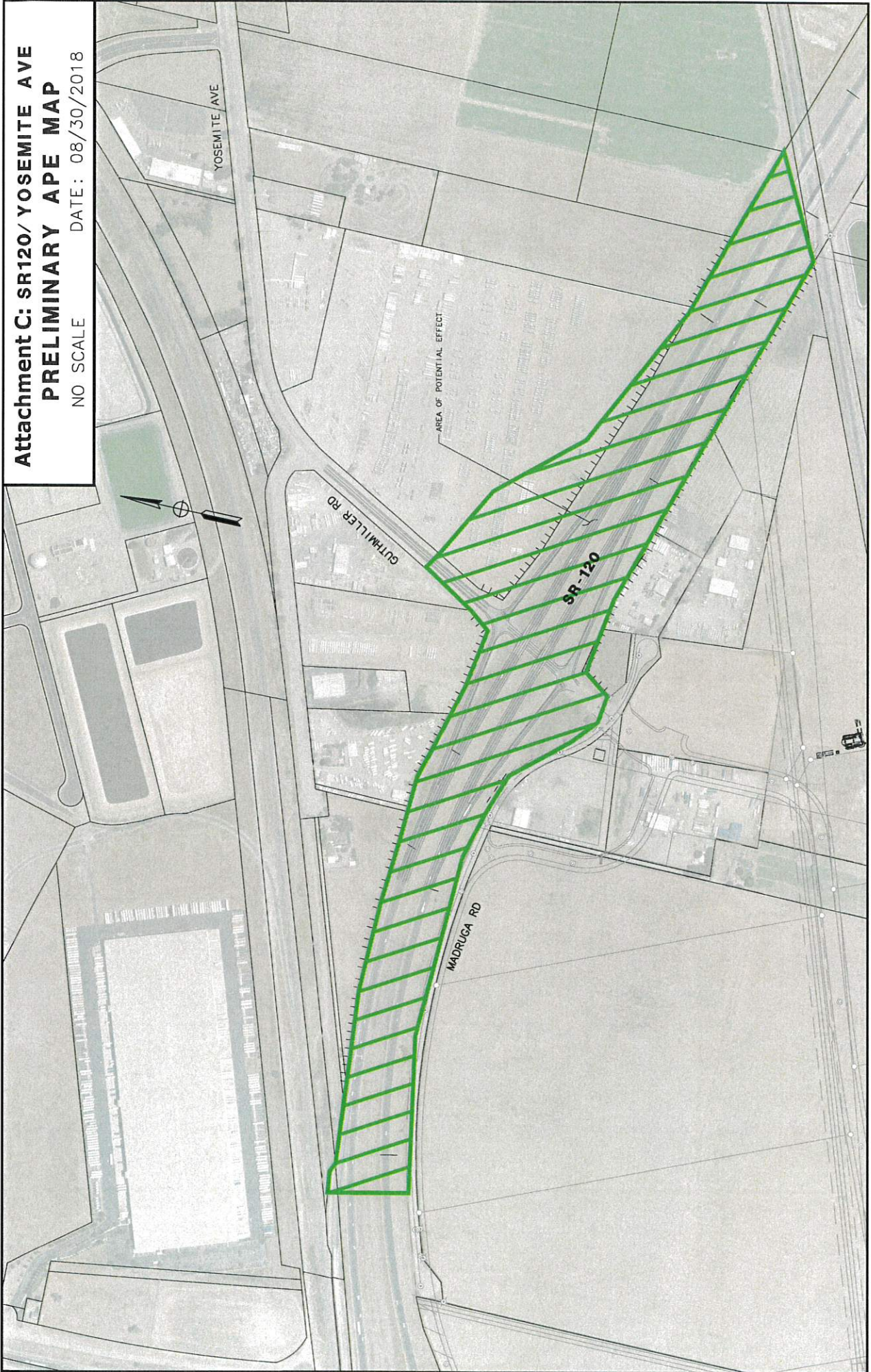
Attachment B: SR120/Yosemite Ave Interchange Project: EA: 10-1G760 - EFIS Project ID: 10 1700 0160

ACTIVITY	START (Month)	DURATION (Months)	REVIEW (Start Month)	REVIEW DURATION (Months)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Environmental Studies																									
Historic Properties Survey Report/Archaeological Study Report (HPSS/ASH) and AB-52 Consultation	1	3	4	2																					
Storm Water Data Report	1	3	4	2																					
Phase I Initial Site Assessment (ISA)	2	1	3	1																					
Air Quality Report	3	3	6	2																					
Noise Study Report (NSR) and Potential Noise Abatement Decision Report (NAOR)	4	2	6	2																					
Natural Environment Study (NES), and a Biological Assessment (BA)	2	4	6	3																					
Conformity Finding (estimated dependent on listing status)	6	2	8	2																					
Environmental Document																									
Draft ED	4	5	9	2																					
Final ED	11	2	13	1																					
Additional Review and Approval Periods																									
Region Quality Control	0	0	14	1																					
Office Chief review	0	0	15	1																					
Public Review Period	17	1	0	0																					
Public Adoption Hearings	18	2	0	0																					
Permitting and Coordination																									
SUMSCP Coverage (Incidental Take Permitting)	12	5	0	0																					
NPDES Permit and SWPPP	12	5	0	0																					
Informal Consultation (CDFW)	2	2	0	0																					

Task Duration Review / Update Periods

**Attachment C: SR120/ YOSEMITE AVE
PRELIMINARY APE MAP**

NO SCALE DATE: 08/30/2018

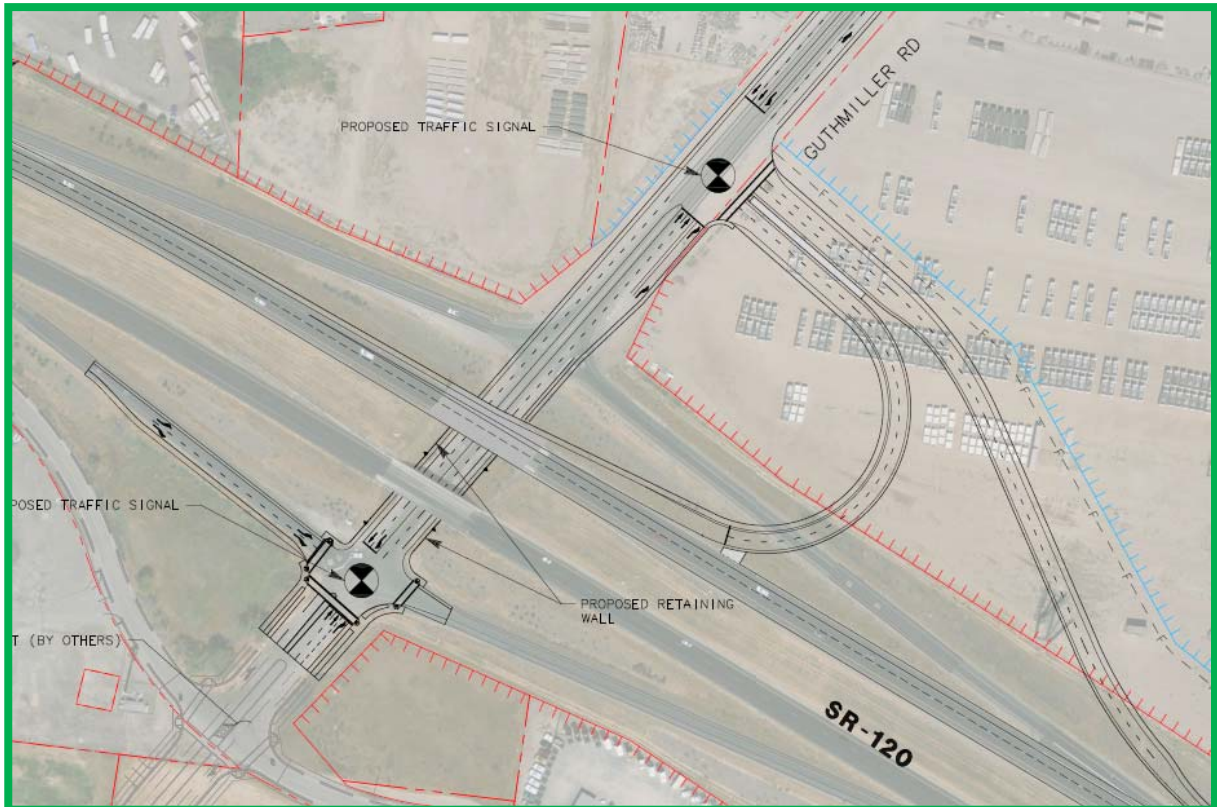


Attachment F

Traffic Engineering Performance Assessment (TEPA)

TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT (TEPA)

FOR THE
STATE ROUTE 120 / YOSEMITE AVENUE INTERCHANGE
PROJECT PSR / PDS
IN LATHROP, CA



Prepared for

California Department of Transportation
City of Lathrop, CA
Mark Thomas

Prepared by

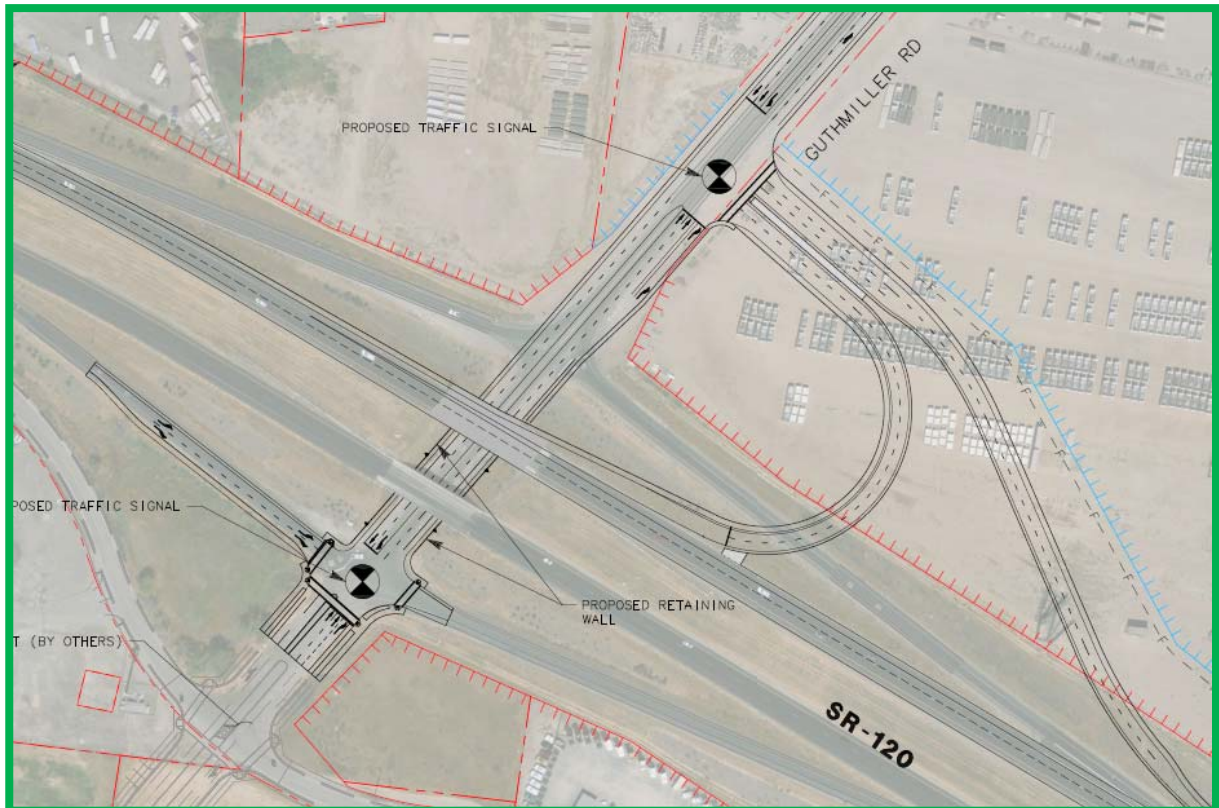
Fehr & Peers
Transportation Consultants
January 25 2018

RS17-3578

FEHR & PEERS

TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT (TEPA)

FOR THE
STATE ROUTE 120 / YOSEMITE AVENUE INTERCHANGE
PROJECT PSR / PDS
IN LATHROP, CA



This Traffic Engineering Performance Assessment (TEPA) was prepared under my direction and responsible charge. I attest to the information contained herein and have judged the qualification of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

February 12, 2018

Fred Choa, P.E.
Registered Professional Traffic Engineer
Fehr & Peers

Date



TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
SR 120 / Yosemite Avenue Interchange Project Description.....	1
TEPA Study Locations.....	1
TEPA Analysis Methodology.....	2
Existing Year 2017 AM and PM Peak Hour Conditions Analysis.....	5
Design Year 2045 Travel Demand Forecasting	8
Design Year 2045 No Project Peak Hour Conditions Analysis.....	8
Design Year 2045 With Project Peak Hour Conditions Analysis.....	10
Design Year 2045 Freeway Operations Analysis.....	11
Next Phase – PA/ED Traffic Operations Analysis Report (TOAR) Scope	13

TECHNICAL APPENDICES

- Appendix A – Existing Year 2017 AM Peak Hour
Synchro Input Data and SimTraffic Version 8.0 Analysis
- Appendix B – Existing PM Peak Hour
Synchro Input Data and SimTraffic Version 8.0 Analysis
- Appendix C – Design Year 2045 No Project AM Peak Hour
Synchro Input Data and SimTraffic Version 8.0 Analysis
- Appendix D – Design Year 2045 No Project PM Peak Hour
Synchro Input Data and SimTraffic Version 8.0 Analysis
- Appendix E – Design Year 2045 With Project AM Peak Hour
Synchro Input Data and SimTraffic Version 8.0 Analysis
- Appendix F – Design Year 2045 With Project PM Peak Hour
Synchro Input Data and SimTraffic Version 8.0 Analysis

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Intersection Level of Service (LOS) Criteria	4
2. Freeway Level of Service (LOS) Criteria.....	5
3. Intersection Analysis – Existing Conditions.....	6
4. SR 120 Freeway Analysis – Existing Conditions.....	7
5. Intersection Analysis – Design Year 2045 No Project Conditions.....	9
6. Intersection Analysis – Design Year 2045 With Project Conditions	10
7. SR 120 Freeway Analysis – Design Year 2045 No Project and With Project Conditions.....	7

TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT (TEPA) FINAL REPORT

This report presents the final results of the Traffic Engineering Performance Assessment (TEPA) analysis for the proposed State Route 120 (SR 120) / Yosemite Avenue PSR/PDS in Lathrop, CA. This TEPA was prepared in accordance with Article 5 in Chapter 5 of *Appendix S: Preparation Guidelines for Project Study Report/Project Development Support Project Initiation Documents* of the Project Development Procedures Manual prepared by Caltrans.

SR 120 / YOSEMITE AVENUE INTERCHANGE PROJECT DESCRIPTION

The Proposed Project would improve the existing SR 120 / Yosemite Avenue interchange to serve projected General Plan Buildout (residential and employment growth) in the City of Lathrop and the neighboring jurisdiction of City of Manteca and San Joaquin County. This With Project scenario was evaluated against a No Project Alternative for Design Year 2045 AM and PM peak hour conditions.

The threshold used to determine the operational benefits of the SR 120 Widening Project were based on Caltrans Level of Service (LOS) D standard.

The purpose of the Proposed State Route 120 / Yosemite Avenue Interchange Project is to:

- Improve local access to SR 120;
- Improve regional mobility on SR 120;
- Reduce greenhouse gas emissions; and
- Relieve congestion during peak hour conditions.

TEPA STUDY LOCATIONS

The following ramp terminal intersections were analyzed for Existing (Year 2017), Design Year 2045 No Project and Design Year 2045 With Project AM and PM Peak Hour Conditions:

- Eastbound SR 120 On/Off-Ramps / Yosemite Avenue; and
- Westbound SR 120 On/Off-Ramps / Yosemite Avenue



The following segments were analyzed for Existing (Year 2017), Design Year 2045 No Project and Design Year 2045 With Project AM and PM Peak Hour Conditions in the SR 120 Widening Project PSR / PDS. It should be noted that the Draft Traffic Engineering Performance Assessment (TEPA) was submitted to Caltrans District 10 on February 7th, 2018 for their review and comment.

The final results of the freeway mainline, on-ramp merge and off-ramp diverge analysis from the SR 120 Widening Project PSR / PDS will be incorporated into the final version of this SR 120 / Yosemite Avenue interchange PSR / PDS.

Eastbound State Route 120

1. NB I-5 off-ramp to EB SR 120 (mainline segment);
2. SB I-5 on-ramp to EB SR 120 (on-ramp merge segment);
3. EB SR 120 between SB I-5 on-ramp and Yosemite Avenue off-ramp (mainline segment);
4. EB SR 120 off-ramp to Yosemite Avenue (diverge segment);
5. EB SR 120 on-ramp from Yosemite Avenue (merge segment);
6. EB SR 120 between Yosemite Avenue on-ramp and Airport Way off-ramp (mainline segment); and
7. EB SR 120 off-ramp to Airport Way (diverge segment);

Westbound State Route 120

1. WB SR 120 on-ramp from Airport Way (merge segment);
2. WB SR 120 between Airport Way on-ramp and Yosemite Avenue off-ramp (mainline segment);
3. EB SR 120 off-ramp to Yosemite Avenue (diverge segment);
4. EB SR 120 on-ramp to Yosemite Avenue (diverge segment);
5. WB SR 120 between Yosemite Avenue on-ramp and NB I-5 off-ramp (mainline segment);
6. WB SR 120 off-ramp to NB I-5 (diverge segment); and
7. WB SR 120 onto SB I-5 (mainline segment).

TEPA ANALYSIS METHODOLOGY

The Synchro/SimTraffic microsimulation software package (Version 8) was used to analyze all unsignalized and signalized study intersections. This program is consistent with the technical approach documented in the *2010 Highway Capacity Manual* (TRB, 2010) for calculating delay at signalized and unsignalized intersections. It considers intersection geometries, turn pocket storage lengths, and intersection control on intersection queuing and delays. Intersection delay/level of service results are based on the SimTraffic results.

The Highway Capacity Software (HCS) 2010 used to analyze all freeway mainline, on-ramp merge, off-ramp diverge and weaving sections. This program is consistent with the technical approach documented in the *2010 Highway Capacity Manual* (TRB, 2010) for calculating density and corresponding level of service.



The following describes the specific inputs, model parameters, and other aspects of the SimTraffic modeling:

Existing/Planned Lane Configurations:

- The existing and planned lane configurations entered into the SimTraffic model are based on existing geometric and the proposed geometrics developed by Mark Thomas (February 2018 GAD).

Peak Hour Factors:

- The peak hour factor (PHF) observed in the field was determined to be 0.91 for AM peak hour conditions and 0.93 for PM peak hour conditions.

Heavy Vehicle Percentage:

- The heavy vehicle percentage observed in the field was determined to be 15% for AM peak hour conditions and 13% for PM peak hour conditions.

These methodologies were applied using Synchro 8 to analyze all study intersections. The following describes many of the specific inputs into Synchro 8:

- Lane Configurations and Pocket Lengths: were entered into Synchro based on aerial imagery measurements;
- Signal Timings: The existing SR 120 / Yosemite Avenue interchange is side-street stop controlled. Under Design Year 2035 No Project Conditions, the interchange was analyzed as an all-way stop controlled intersection. Under Design Year 2035 With Project Conditions, a cycle length of 90 seconds was used for both AM and PM peak hour conditions.
- Heavy Vehicle %: Entered into Synchro 8 per the values discussed in previous section; and

SimTraffic Modeling

- Consistent with Caltrans District 10 preferences (e.g., required for the SR 120 / McKinley Avenue Interchange, SR 120 / Union Road interchange, and I-205 / Chrisman Road Interchange projects), the SimTraffic model was run for the entire peak hour using the following four 15-minute intervals:
 - 15-minute – no PHF
 - 15-minute – with PHF
 - 15-minute – no PHF
 - 15-minute – no PHF



- For each scenario, the results of 12 SimTraffic 8.0 runs averaged to yield the reported conclusions. Outputs include average delay, 95th percentile vehicle queues, and total network performance (vehicle hours of delay, total stops, vehicle miles traveled, fuel consumption, average travel speed etc.) as reported by SimTraffic.

Reported Results

- The average delay and LOS are reported for the side street stop-controlled movements, main street movements, and the entire intersection for unsignalized intersections.
- The average delay and LOS are reported the entire intersection for signalized intersections.
- **Table 1** displays the delay range associated with each LOS category for signalized and unsignalized intersections.
- **Table 2** displays the density ranges associated with each LOS category for basic freeway segments, weaving section, and ramp merge/diverge movements.

TABLE 1: INTERSECTION LEVEL OF SERVICE (LOS) CRITERIA

Level of Service (LOS)	Average Control Delay (seconds per vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

Notes: The average delay reported for signalized intersections is for all vehicles passing through the intersection, whereas the average delay reported for unsignalized intersections is for the minor street movement with the greatest delay.

Source: *Highway Capacity Manual* (Transportation Research Board, 6th Edition).



TABLE 2: FREEWAY LEVEL OF SERVICE (LOS) CRITERIA

Level of Service (LOS)	Density (Passenger Cars per Mile per Lane) ¹	
	Mainline and Weaving Section	Ramp Merge/Diverge
A	≤ 11	≤ 10
B	> 11 to 18	> 10 to 20
C	> 18 to 26	> 20 to 28
D	> 26 to 35	> 28 to 35
E	> 35 to 45	> 35
F	> 45 or any v_d/c ratio > 1.00 ¹	Demand exceeds capacity ²

Note: ¹ v_d/c ratio = demand flow rate divided by the capacity of a given segment.

² Occurs when freeway demand exceeds upstream (diverge) or downstream (merge) freeway segment capacity, or if off-ramp demand exceeds off-ramp capacity.

Source: Exhibits 10-7 and 13-2 *Highway Capacity Manual* (Transportation Research Board, 6th Edition).

Level of Service Standards

Based on previous TEPAs completed for Caltrans District 10 (Stockton), freeway mainline, on-ramp merge sections, off-ramp diverge sections and intersections within Caltrans right-of-way should operate at LOS D or better for both AM and PM Peak Hour.

EXISTING YEAR 2017 AM AND PM PEAK HOUR CONDITIONS ANALYSIS

The results of the SimTraffic analysis is presented in Table 3. The primary conclusions of the Existing Conditions analysis presented in Table 3 are:

1. During the AM peak hour, the SR 120 EB Ramps / Yosemite Avenue intersection operates at acceptable LOS A/B conditions;
2. During the AM peak hour, the SR 120 WB Ramps / Yosemite Avenue intersection operates at acceptable LOS A/B conditions;
3. During the PM peak hour, the SR 120 EB Ramps / Yosemite Avenue intersection operates at acceptable LOS A/B conditions; and
4. During the PM peak hour, the SR 120 WB Ramps / Yosemite Avenue intersection operates at acceptable LOS A/B conditions.



TABLE 3: INTERSECTION ANALYSIS – EXISTING CONDITIONS

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / Movement (sec/veh)	LOS	Delay / Movement (sec/veh)	LOS
1. SR 120 EB Ramps / Yosemite Avenue	Side-Street Stop Controlled	10.7 (EB LT)	LOS B	11.1 (EB LT)	LOS B
		4.4 (EB RT)	LOS A	6.6 (EB RT)	LOS A
		0.2 (NB TH)	LOS A	0.6 (NB TH)	LOS A
		0.3 (NB RT)	LOS A	0.1 (NB RT)	LOS A
		1.9 (SB LT)	LOS A	2.1 (SB LT)	LOS A
		1.3 (SB TH)	LOS A	1.4 (SB TH)	LOS A
		6.8 (Entire)	LOS A	7.6 (Entire)	LOS A
2. SR 120 WB Ramps / Yosemite Avenue	Side-Street Stop Controlled	12.0 (WB LT)	LOS B	6.9 (WB LT)	LOS A
		3.5 (WB RT)	LOS A	4.3 (WB RT)	LOS A
		3.9 (NB LT)	LOS A	4.7 (NB LT)	LOS A
		1.0 (NB TH)	LOS A	1.7 (NB TH)	LOS A
		1.6 (SB TH)	LOS A	1.4 (SB TH)	LOS A
		0.9 (SB RT)	LOS A	0.7 (SB RT)	LOS A
		1.8 (Entire)	LOS A	1.8 (Entire)	LOS A

Source: *Highway Capacity Manual* (Transportation Research Board, 6th Edition).

Results Based on 12 SimTraffic Version 8.0 Model Runs

The results of the HCS freeway analysis are presented in Table 4. The primary conclusions of the Existing Conditions AM Peak Hour analysis are:

1. During the AM peak hour, the directional split on SR 120 is 60% westbound and 40% eastbound.
2. The peak direction of travel during the AM Peak Hour is Westbound SR 120 as commuters and goods movement (trucks) from SR 99 and the Central Valley travel towards the San Francisco Bay Area;
3. With mainline traffic volumes increasing from 3,265 to 3,630 vehicles in two (2) travel lanes, Westbound SR 120 operates at marginal LOS E conditions from the Airport Way interchange to Interstate 5;
4. In the off-peak Eastbound SR 120, traffic volumes are lower, resulting in acceptable LOS C conditions between Interstate 5 and the Airport Way interchange during the AM peak hour;



TABLE 4 : SR 120 FREEWAY ANALYSIS – EXISTING CONDITIONS

Freeway Segment	Type	AM Peak Hour		PM Peak Hour	
		Volume Density	LOS	Volume Density	LOS
WB SR 120 between Airport Way on-ramp and Yosemite Avenue	Basic	3,500	E	2,610	C
	2 Mainline Lanes	35.0		22.4	
WB SR 120 diverge at Yosemite Avenue off-ramp	Diverge	120	E	105	C
	1 Lane Off-Ramp 2 Mainline Lanes	37.9		27.5	
WB SR 120 merge at Yosemite Avenue on-ramp	Merge	250	E	230	C
	1 Lane On-Ramp 2 Mainline Lanes	37.3		27.8	
WB SR 120 between Yosemite Avenue on-ramp and NB I-5 off-ramp	Basic	3,630	E	2,735	C
	2 Mainline Lanes	37.3		23.6	
WB SR 120 diverge at NB I-5 off-ramp	Diverge	490	E	695	D
	1 Lane Off-Ramp 2 Mainline Lanes	39.7		29.2	
WB SR 120 between NB I-5 off-ramp and SB I-5	Basic	3,140	D	2,040	C
	2 Mainline Lanes	32.5		20.2	
EB SR 120 between NB I-5 and SB I-5 on-ramp	Basic	1,695	B	3,660	C
	2 Mainline Lanes	15.4		34.6	
EB SR 120 merge at SB I-5 on-ramp	Merge	580	C	675	F
	1 Lane On-Ramp 2 Mainline Lanes	24.2		41.0	
EB SR 120 between NB I-5 and SB I-5 on-ramp and Yosemite Avenue	Basic	2,274	C	4,335	F
	2 Mainline Lanes	20.6		48.2	
EB SR 120 diverge at Yosemite Avenue off-ramp	Diverge	200	C	335	F
	1 Lane Off-Ramp 2 Mainline Lanes	25.5		44.1	
EB SR 120 merge at Yosemite Avenue on-ramp	Merge	85	C	150	E
	1 Lane On-Ramp 2 Mainline Lanes	23.5		39.7	
EB SR 120 between Yosemite Avenue and Airport Way	Basic	2,160	C	4,150	E
	2 Mainline Lanes	19.6		43.7	
EB SR 120 diverge at Airport Way	Diverge	240	C	768	E
	1 Lane Off-Ramp 2 Mainline Lanes	24.3		42.3	

Notes: Based on methodologies described in *HCM* Chapter 2.

Density estimates are rounded to nearest second. Corresponding LOS is based on first significant digit using HCM thresholds.



The primary conclusions of the Existing Conditions PM Peak Hour analysis are:

1. During the PM peak hour, the directional split on SR 120 is 60% eastbound and 40% westbound. A direct reversal of the peak direction when compared to the morning peak hour;
2. The peak direction of travel during the PM Peak Hour is Eastbound SR 120 as commuters and a smaller percentage of goods movement from the San Francisco Bay Area return to SR 99 and the Central Valley;
3. With mainline traffic volumes ranging from 4,335 to 3,660 vehicles in two (2) travel lanes, Eastbound SR 120 operates at unacceptable LOS F between I-5 and the Yosemite Avenue interchange and marginal LOS E conditions from the Yosemite Avenue interchange to the Airport Way interchange;
4. In the off-peak Westbound SR 120, traffic volumes are lower, resulting in acceptable LOS C/D conditions between the Airport Way and Interstate 5 interchanges during the PM peak hour.

DESIGN YEAR 2045 TRAVEL DEMAND FORECASTING

The San Joaquin Council of Governments Regional Travel Demand Model (SJCOG RTP/SCS Model) was used to develop Design Year 2045 AM and PM peak hour volumes and is based on General Plan Build-Out of the City of Lathrop and the adjacent jurisdictions of City of Manteca and San Joaquin County. The following approach was used to develop Design Year 2045 forecasts:

- 1) The SR 120 / McKinley Avenue interchange was added between the Yosemite Avenue and Airport Way interchanges;
- 2) The SR 120 Mainline between I-5 and SR 99 was modified from two (2) to three (3) travel lanes in each direction; and
- 3) The SR 120 / SR 99 freeway to freeway improvements were added. It should be noted that the northbound SR 99 Austin Road on-ramp and southbound SR 99 Austin Road off-ramp were not included in the SJCOG Model based on the Phase A SR 120 / SR 99; Project.

DESIGN YEAR 2045 NO PROJECT PEAK HOUR CONDITIONS ANALYSIS

The results of the SimTraffic analysis is presented in Table 5 for Design Year 2045 No Project AM Peak Hour Conditions. It should be noted that the initial Design Year 2045 No Project analysis was completed using the existing side-street stop control. But the increased northbound / southbound traffic volume on Yosemite Avenue resulted in gridlock conditions for both eastbound and westbound off-ramps. Therefore, the intersections were analyzed as all-way stop controlled in order for off-ramp traffic to exit SR 120.



The primary conclusions of the analysis presented in Table 5 are:

1. During the AM peak hour, the SR 120 EB Ramps / Yosemite Avenue intersection operates at unacceptable LOS F conditions;
2. The only movement to operate at acceptable level of service conditions is the northbound right-turn movement (LOS B);
3. During the AM peak hour, the SR 120 WB Ramps / Yosemite Avenue intersection operates at unacceptable LOS F conditions;
4. The only movement to operate at acceptable level of service conditions is the southbound right-turn movement (LOS D);
5. During the PM peak hour, the SR 120 EB Ramps / Yosemite Avenue intersection operates at unacceptable LOS F conditions; and
6. During the PM peak hour, the SR 120 WB Ramps / Yosemite Avenue intersection operates at unacceptable LOS F conditions.

TABLE 5: INTERSECTION ANALYSIS – DESIGN YEAR 2045 NO PROJECT CONDITIONS

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / Movement (sec/veh)	LOS	Delay / Movement (sec/veh)	LOS
3. SR 120 EB Ramps / Yosemite Avenue	All-Way Stop Controlled	550.6 (EB LT)	LOS F	1,212.3 (EB LT)	LOS F
		542.8 (EB RT)	LOS F	1,211.8 (EB RT)	LOS F
		39.2 (NB TH)	LOS E	1,200.7 (NB TH)	LOS F
		10.2 (NB RT)	LOS B	557.9 (NB RT)	LOS F
		73.8 (SB LT)	LOS F	84.2 (SB LT)	LOS F
		75.6 (SB TH)	LOS F	85.6 (SB TH)	LOS F
		324.1 (Entire)	LOS F	883.2 (Entire)	LOS F
4. SR 120 WB Ramps / Yosemite Avenue	All-Way Stop Controlled	1,064.9 (WB LT)	LOS F	249.9 (WB LT)	LOS F
		1,037.1 (WB RT)	LOS F	233.4 (WB RT)	LOS F
		65.6 (NB LT)	LOS F	78.3 (NB LT)	LOS F
		66.8 (NB TH)	LOS F	80.1 (NB TH)	LOS F
		330.6 (SB TH)	LOS F	829.3 (SB TH)	LOS F
		27.3 (SB RT)	LOS D	159.6 (SB RT)	LOS F
		551.1 (Entire)	LOS F	326.9 (Entire)	LOS F

Source: *Highway Capacity Manual* (Transportation Research Board, 6th Edition).

Results Based on 12 SimTraffic Version 8.0 Model Runs

Bold identifies unacceptable delay and level of service



DESIGN YEAR 2045 WITH PROJECT PEAK HOUR CONDITIONS ANALYSIS

The results of the SimTraffic analysis is presented in Table 6 for Design Year 2045 With Project AM Peak Hour Conditions. The primary conclusions of the analysis presented in Table 6 are:

1. During the AM peak hour, the SR 120 EB Ramps / Yosemite Avenue intersection operates at acceptable LOS A/B/C conditions;
2. During the AM peak hour, the SR 120 WB Ramps / Yosemite Avenue intersection operates at acceptable LOS A/B/C/D conditions;
3. During the PM peak hour, the SR 120 EB Ramps / Yosemite Avenue intersection operates at acceptable LOS A/B/C/D conditions;
During the PM peak hour, the SR 120 WB Ramps / Yosemite Avenue intersection operates at acceptable LOS A/B/C/D conditions.

TABLE 6: INTERSECTION ANALYSIS – DESIGN YEAR 2045 WITH PROJECT CONDITIONS

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay / Movement (sec/veh)	LOS	Delay / Movement (sec/veh)	LOS
5. SR 120 EB Ramps / Yosemite Avenue	Signalized	29.0 (EB LT)	LOS C	48.4 (EB LT)	LOS D
		18.2 (EB RT)	LOS B	9.7 (EB RT)	LOS A
		20.7 (NB TH)	LOS C	48.0 (NB TH)	LOS D
		4.0 (NB RT)	LOS A	17.0 (NB RT)	LOS B
		25.1 (SB LT)	LOS C	41.6 (SB LT)	LOS D
		23.8 (SB TH)	LOS C	18.1 (SB TH)	LOS B
		22.1 (Entire)	LOS C	33.6 (Entire)	LOS C
6. SR 120 WB Ramps / Yosemite Avenue	Signalized	35.2 (WB LT)	LOS D	42.1 (WB LT)	LOS D
		9.9 (WB RT)	LOS A	10.9 (WB RT)	LOS B
		26.5 (NB TH)	LOS C	16.5 (NB TH)	LOS B
		10.1 (NB RT)	LOS B	10.4 (NB RT)	LOS B
		35.5 (SB LT)	LOS D	34.3 (SB LT)	LOS C
		11.4 (SB TH)	LOS B	7.0 (SB TH)	LOS A
		23.3 (Entire)	LOS C	18.4 (Entire)	LOS B

Source: *Highway Capacity Manual* (Transportation Research Board, 6th Edition).

Results Based on 12 SimTraffic Version 8.0 Model Runs

Bold identifies unacceptable delay and level of service



DESIGN YEAR 2045 FREEWAY OPERATIONS ANALYSIS

The results of the HCS freeway analysis are presented in Table 7. It should be noted that based on the projected traffic volumes on SR 120, the SR 120 Widening Project PSR / PDS includes the following design alternatives:

1. Three travel lanes in each direction and a reversible travel lane based on peak direction of travel. The reversible lane would be westbound during the morning commute and eastbound during the evening commute.
2. Four travel lanes in each direction from Interstate 5 to the Airport Way interchange.

The proposed re-construction of the SR 120 / Yosemite Avenue interchange would eliminate the single lane diagonal on-ramp onto westbound SR 120 and the construction of a two-lane metered loop on-ramp, with two (2) metered mixed-flow. The proposed loop on-ramp would increase the distance between the Yosemite Avenue on-ramp from approximately 1,300 feet (Existing Design) to 2,600 feet (Proposed Design). The eastbound SR 120 on-ramp from Yosemite Avenue would be widened from one travel lane to three travel lanes, with two (2) metered mixed-flow and one HOV.

The primary conclusions of the Design Year 2045 AM Peak Hour analysis are:

1. During the AM peak hour, the directional split on SR 120 will increase to 63% westbound and 37% eastbound;
2. Compared to Existing AM peak hour conditions, westbound SR 120 volumes are projected to increase 70% between Existing Year 2017 and Design Year 2045;
3. With mainline traffic volumes increasing from 5,705 to 6,200 vehicles and SR 120 widened from two (2) to four lanes between McKinley Avenue and Interstate 5, the peak westbound direction will operate at acceptable LOS D conditions; and
4. In the off-peak Eastbound SR 120 direction, traffic volumes are slightly lower, resulting in acceptable LOS C conditions between I-5 and McKinley Avenue.

The primary conclusions of the Design Year 2045 PM Peak Hour analysis are:

1. During the PM peak hour, the directional split on SR 120 will increase to 61% eastbound and 39% westbound.
2. Compared to Existing PM peak hour conditions, eastbound SR 120 volumes are projected to increase 60% between Existing Year 2017 and Design Year 2045 as a result of peak hour spreading.
3. With mainline traffic volumes ranging from 6,980 to 7,090 vehicles and SR 120 widened from two (2) to four lanes between Interstate 5 and McKinley Avenue, the peak eastbound direction will operate at acceptable LOS D conditions; and
4. In the off-peak Westbound SR 120 direction, traffic volumes are slightly lower, resulting in acceptable LOS C/D conditions between McKinley Avenue and Interstate 5.



**TABLE 7 : SR 120 FREEWAY ANALYSIS –
DESIGN YEAR 2045 NO PROJECT AND WITH PROJECT CONDITIONS**

Freeway Segment	Type	AM Peak Hour		PM Peak Hour	
		Volume Density	LOS	Volume Density	LOS
WB SR 120 between McKinley Avenue on-ramp and Yosemite Avenue	Basic 4 Mainline Lanes	6,510 31.3	D	3,805 21.8	C
WB SR 120 diverge at Yosemite Avenue off-ramp	Diverge 1 Lane Off-Ramp 4 Mainline Lanes	920 31.1	D	460 27.1	C
WB SR 120 merge at Yosemite Avenue on-ramp	Merge 1 Lane On-Ramp 4 Mainline Lanes	610 29.9	D	1,060 32.7	D
WB SR 120 between Yosemite Avenue on-ramp and NB I-5 off-ramp	Basic 4 Mainline Lanes	6,200 29.3	D	4,405 25.6	C
WB SR 120 diverge at NB I-5 off-ramp	Diverge 1 Lane Off-Ramp 4 Mainline Lanes	495 32.5	D	600 30.8	D
WB SR 120 between NB I-5 off-ramp and SB I-5	Basic 3 Mainline Lanes	5,705 30.7	D	3,805 21.8	C
EB SR 120 between NB I-5 and SB I-5 on-ramp	Basic 3 Mainline Lanes	2,710 16.4	B	5,370 31.4	D
EB SR 120 merge at SB I-5 on-ramp	Merge 1 Lane On-Ramp 3 Mainline Lanes	925 27.6	C	1,610 33.3	D
EB SR 120 between NB I-5 and SB I-5 on-ramp and Yosemite Avenue	Basic 4 Mainline Lanes	3,635 22.0	C	6,980 30.9	D
EB SR 120 diverge at Yosemite Avenue off-ramp	Diverge 1 Lane Off-Ramp 4 Mainline Lanes	890 27.2	C	920 30.1	D
EB SR 120 merge at Yosemite Avenue on-ramp	Merge 1 Lane On-Ramp 4 Mainline Lanes	310 20.8	C	1,030 30.2	D
EB SR 120 between Yosemite Avenue and McKinley Avenue	Basic 4 Mainline Lanes	3,055 18.4	C	7,090 30.8	D
EB SR 120 diverge at McKinley Avenue	Diverge 1 Lane Off-Ramp 4 Mainline Lanes	610 21.1	C	1,650 30.4	D

Notes: Based on methodologies described in *HCM* Chapter 2.

Density estimates are rounded to nearest second. Corresponding LOS is based on first significant digit using HCM thresholds.



NEXT PHASE - PA/ED TRAFFIC OPERATIONS ANALYSIS REPORT (TOAR) SCOPE

Per the TEPA guidelines a traffic scope is presented for the PA/ED phase. Prior to initiation of the PA/ED the traffic scope should be reviewed to ensure that it is acceptable to PDT members, including the City of Lathrop, San Joaquin Council of Governments and Caltrans District 10 (Stockton). Changes and/or modifications to the traffic scope can be made prior to initiating the PA/ED phase. The more detailed traffic analysis that will be performed during the PA/ED phase will be used to support the purpose and need of the project.

Study Area and Traffic Forecasting

The most up-to-date version of the existing and future year SJCOG RTP/SCS Model should be executed a) Without the SR 120 / Yosemite Avenue Interchange Project; and b) With the SR 120 / Yosemite Avenue Interchange Project. New traffic counts (year 2018 or later) should be collected. Mainline counts should include the number and type (i.e. number of axles) of trucks.

Focused Study Area Model Validation

The SJCOG RTP/SCS Model should be used to determine future year peak hour forecasts for the study corridor. Prior to developing future year forecasts a focused base year model validation exercise should be undertaken in the study area. Under this task the existing land use and roadway network within the study area in the base year model should be checked for accuracy and modified as necessary to best reflect current conditions.

The base year model should then be executed and the AM and PM Peak Hour SJCOG RTP/SCS Model volumes compared against the traffic counts collected to confirm that the model meets Caltrans validation thresholds in the study area. The following describes the four (4) parameters and performance standards for evaluating model accuracy.

1. **Model/Count Ratio:** Model/count ratio is computed by dividing the model-assigned volume by the actual traffic count for individual roadways model-wide.

Standard: Model/count ratios should be close to 1.00.

2. **Deviation:** Deviation is the difference between the model volume and the actual count, divided by the actual count.

Standard: At least 75 percent of roadway links should be within their maximum desirable deviation, which ranges from approximately 5 to 60 percent, depending on the total volume on the link.



3. **Correlation Coefficient:** The correlation coefficient estimates the correlation between the actual traffic counts and the estimated traffic volumes from the model.

Standard: The suggested model-wide correlation coefficient is greater than 0.88.

4. **The Percent Root Mean Square Error (PRMSE):** PRMSE is the square root of the model volume minus the actual count squared divided by the number of counts. It is a measure similar to standard deviation in that it assesses the accuracy of the entire model.

Standard: The suggested appropriate aggregate PRMSE is less than 40 percent for all links with counts, or by facility type and area type.

Future Year Traffic Forecasts

Modifications made to the base year model should be carried forward to the future year SJCOG RTP/SCS Model. The SJCOG RTP/SCS Model should be used to develop Opening Year and Design Year forecasts for No Build and With Project Alternative.

Future land use and roadway network assumptions for the study area should be consistent with the San Joaquin Council of Governments Regional Transportation Plan, the City of Lathrop General Plan, the City of Manteca General Plan, and San Joaquin County General Plan. The regional travel demand model assumptions should be developed in consultation with the PDT including the SJCOG and Caltrans District 10 (Stockton). The future year traffic forecasts should be reviewed and approved by Caltrans before proceeding with the future year traffic operations analysis. In addition to traffic forecasts, the SJCOG RTP/SCS Model should be used to determine the regional implications of the project by examining additional measures of effectiveness (MOEs) such as vehicle miles of travel (VMT) and vehicle hours of delay (VHD) with and without the Project.

Traffic Operations and Capacity Analysis

Existing Conditions Analysis

Intersection Analysis

The intersection analysis should be consistent with the methodologies presented in the Transportation Research Board Highway Capacity Manual (HCM) and the Synchro / SimTraffic software using the current version when the PA/ED phase is undertaken.



Mainline and Ramp Analysis

The mainline and ramp analysis should be consistent with the methodologies presented in the Transportation Research Board Highway Capacity Manual's complimentary *Highway Capacity Software (HCS)* using the current version when the PA/ED phase is undertaken.

Future Year Analysis

Intersection Analysis

The intersection analysis should be consistent with the methodologies presented in the Transportation Research Board Highway Capacity Manual (HCM) and the Synchro / SimTraffic software using the current version when the PA/ED phase is undertaken.

Mainline and Ramp Analysis

The same mainline and ramp locations evaluated under Existing Conditions should be evaluated under Construction Year and Design Year AM and PM Peak Hour Conditions using the same traffic analysis tool described in the previous section.

Deliverables

The following deliverables should be provided as part of the Draft and Final Traffic Operations Analysis Report (TOAR) prepared for the PA/ED phase:

- 1) Introduction (Purpose and Need) Chapter;
- 2) Existing Conditions Chapter;
- 3) Base Year SJCOG RTP/SCS Model Validation Chapter;
- 4) Construction Year and Design Year SJCOG RTP/SCS Model Traffic Forecasts Chapter;
- 5) Intersection Control Evaluation(ICE) Chapter;
- 6) Construction Year Traffic Operations Analysis Chapter;
- 7) Design Year Traffic Operations Analysis Chapter; and
- 8) Conclusions Chapter


















**APPENDIX A – EXISTING AM PEAK HOUR
SYNCHRO INPUT DATA AND
SIMTRAFFIC VERSION 8.0 ANALYSIS**



Lanes, Volumes, Timings
 1: Yosemite Avenue & EB SR 120 Off/On-Ramp

Existing Year 2017 Conditions- AM Peak Hour

2/9/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	180	20	0	0	0	0	20	5	80	15	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	0		25	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected												0.959
Satd. Flow (prot)	0	1652	1404	0	0	0	0	1652	1404	0	1584	0
Flt Permitted												0.959
Satd. Flow (perm)	0	1652	1404	0	0	0	0	1652	1404	0	1584	0
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1066			1090			522			408	
Travel Time (s)		16.2			16.5			10.2			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	198	22	0	0	0	0	22	5	88	16	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	198	22	0	0	0	0	22	5	0	104	0
Sign Control		Stop			Stop			Free			Free	

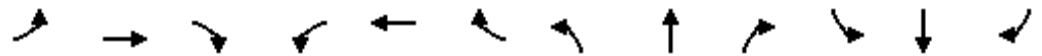
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
2: Yosemite Avenue & WB SR 120 Off/On-Ramp

Existing Year 2017 Conditions- AM Peak Hour

2/9/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗		↖			↕	↗
Volume (vph)	0	0	0	0	15	105	15	185	0	0	80	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		25	0		0	0		50
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected								0.996				
Satd. Flow (prot)	0	0	0	0	1652	1404	0	1646	0	0	1652	1404
Flt Permitted								0.996				
Satd. Flow (perm)	0	0	0	0	1652	1404	0	1646	0	0	1652	1404
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		973			1160			408			579	
Travel Time (s)		14.7			17.6			7.9			11.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	0	16	115	16	203	0	0	88	258
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	16	115	0	219	0	0	88	258
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.5%
Analysis Period (min)	15
	ICU Level of Service A

1: Yosemite Avenue & EB SR 120 Off/On-Ramp Performance by movement

Movement	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.3	3.9	0.1	4.2	0.0	0.0	0.5
Total Del/Veh (s)	10.7	4.4	0.2	0.3	1.9	1.3	6.8
Total Stops	178	19	0	0	6	0	203
Stop/Veh	0.99	1.00	0.00	0.00	0.08	0.00	0.64
Travel Dist (mi)	35.0	3.8	1.7	0.6	5.7	1.3	48.0
Travel Time (hr)	1.3	0.2	0.1	0.0	0.3	0.0	1.9
Avg Speed (mph)	27	29	34	25	22	30	26
Fuel Used (gal)	1.0	0.1	0.1	0.0	0.1	0.0	1.4
Vehicles Entered	178	19	18	6	78	17	316
Vehicles Exited	178	19	18	6	78	17	316
Hourly Exit Rate	178	19	18	6	78	17	316
Input Volume	180	20	20	5	80	15	320
% of Volume	99	96	91	120	98	111	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: Yosemite Avenue & WB SR 120 Off/On-Ramp Performance by movement

Movement	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	3.9	0.2	0.2	0.8	3.6	2.2
Total Del/Veh (s)	12.0	3.5	3.9	1.0	1.6	0.9	1.8
Total Stops	14	104	7	2	0	2	129
Stop/Veh	1.00	0.99	0.44	0.01	0.00	0.01	0.20
Travel Dist (mi)	3.0	22.3	0.6	7.2	8.4	25.5	67.0
Travel Time (hr)	0.1	0.8	0.0	0.3	0.3	1.3	2.9
Avg Speed (mph)	26	31	14	28	30	24	27
Fuel Used (gal)	0.1	0.6	0.0	0.4	0.3	0.7	2.2
Vehicles Entered	14	104	15	183	81	243	640
Vehicles Exited	14	104	16	183	81	243	641
Hourly Exit Rate	14	104	16	183	81	243	641
Input Volume	15	105	15	185	80	235	635
% of Volume	92	99	105	99	102	104	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.8
Total Del/Veh (s)	4.9
Total Stops	332
Stop/Veh	0.38
Travel Dist (mi)	256.5
Travel Time (hr)	10.2
Avg Speed (mph)	26
Fuel Used (gal)	9.7
Vehicles Entered	857
Vehicles Exited	858
Hourly Exit Rate	858
Input Volume	1810
% of Volume	47
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: Yosemite Avenue & EB SR 120 Off/On-Ramp

Movement	EB	EB	NB	NB	SB
Directions Served	T	R	T	R	LT
Maximum Queue (ft)	119	76	3	21	51
Average Queue (ft)	55	18	0	1	6
95th Queue (ft)	96	56	1	11	29
Link Distance (ft)	1037		479		356
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25		25	
Storage Blk Time (%)	13	1	0	0	
Queuing Penalty (veh)	3	2	0	0	

Intersection: 2: Yosemite Avenue & WB SR 120 Off/On-Ramp

Movement	WB	WB	NB	SB	SB
Directions Served	LT	R	LT	T	R
Maximum Queue (ft)	69	79	68	2	22
Average Queue (ft)	14	44	7	0	1
95th Queue (ft)	48	78	33	2	13
Link Distance (ft)	1129		356	535	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25			50
Storage Blk Time (%)	2	8			0
Queuing Penalty (veh)	2	1			0

Network Summary

Network wide Queuing Penalty: 8

**APPENDIX B – EXISTING PM PEAK HOUR
SYNCHRO INPUT DATA AND
SIMTRAFFIC VERSION 8.0 ANALYSIS**



Lanes, Volumes, Timings
 1: Yosemite Avenue & EB SR 120 Off/On-Ramp

Existing Year 2017 Conditions- PM Peak Hour

2/9/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗		↕	
Volume (vph)	320	0	15	0	0	0	0	30	15	135	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	0		25	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.950									0.956	
Satd. Flow (prot)	0	1597	1429	0	0	0	0	1681	1429	0	1607	0
Flt Permitted		0.950									0.956	
Satd. Flow (perm)	0	1597	1429	0	0	0	0	1681	1429	0	1607	0
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1066			1090			522			408	
Travel Time (s)		16.2			16.5			10.2			7.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	344	0	16	0	0	0	0	32	16	145	11	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	344	16	0	0	0	0	32	16	0	156	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.1%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 2: Yosemite Avenue & WB SR 120 Off/On-Ramp

Existing Year 2017 Conditions- PM Peak Hour

2/9/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗		↕			↕	↗
Volume (vph)	0	0	0	10	0	95	20	330	0	0	135	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		25	0		0	0		50
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.950			0.997				
Satd. Flow (prot)	0	0	0	0	1597	1429	0	1676	0	0	1681	1429
Flt Permitted					0.950			0.997				
Satd. Flow (perm)	0	0	0	0	1597	1429	0	1676	0	0	1681	1429
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		973			1160			408			579	
Travel Time (s)		14.7			17.6			7.9			11.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	11	0	102	22	355	0	0	145	226
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	11	102	0	377	0	0	145	226
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.8%
Analysis Period (min)	15
	ICU Level of Service A

1: Yosemite Avenue & EB SR 120 Off/On-Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.4	3.5	0.2	4.2	0.0	0.0	0.5
Total Del/Veh (s)	11.1	6.6	0.6	0.1	2.1	1.4	7.6
Total Stops	316	17	0	0	10	0	343
Stop/Veh	1.00	1.13	0.00	0.00	0.08	0.00	0.66
Travel Dist (mi)	61.8	2.9	2.8	1.4	10.4	0.8	80.2
Travel Time (hr)	2.7	0.1	0.1	0.1	0.5	0.0	3.5
Avg Speed (mph)	23	26	33	25	22	30	23
Fuel Used (gal)	1.9	0.1	0.1	0.0	0.3	0.0	2.4
Vehicles Entered	314	15	30	15	131	10	515
Vehicles Exited	315	15	30	15	131	10	516
Hourly Exit Rate	315	15	30	15	131	10	516
Input Volume	320	15	30	15	135	10	526
% of Volume	98	98	101	98	97	98	98
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: Yosemite Avenue & WB SR 120 Off/On-Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.4	4.0	0.0	0.0	0.7	3.6	1.6
Total Del/Veh (s)	6.9	4.3	4.7	1.7	1.4	0.7	1.8
Total Stops	9	97	7	3	0	1	117
Stop/Veh	1.00	1.00	0.39	0.01	0.00	0.00	0.15
Travel Dist (mi)	2.0	20.7	1.4	25.7	13.7	22.2	85.6
Travel Time (hr)	0.1	0.8	0.1	1.1	0.5	1.1	3.7
Avg Speed (mph)	28	30	16	23	31	25	26
Fuel Used (gal)	0.1	0.6	0.1	1.8	0.5	0.6	3.7
Vehicles Entered	9	97	18	327	132	211	794
Vehicles Exited	9	97	18	327	132	212	795
Hourly Exit Rate	9	97	18	327	132	212	795
Input Volume	10	95	20	331	135	210	802
% of Volume	88	102	91	99	98	101	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.8
Total Del/Veh (s)	6.8
Total Stops	460
Stop/Veh	0.55
Travel Dist (mi)	288.8
Travel Time (hr)	11.9
Avg Speed (mph)	25
Fuel Used (gal)	11.0
Vehicles Entered	823
Vehicles Exited	826
Hourly Exit Rate	826
Input Volume	2159
% of Volume	38
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: Yosemite Avenue & EB SR 120 Off/On-Ramp

Movement	EB	EB	NB	NB	SB
Directions Served	LT	R	T	R	LT
Maximum Queue (ft)	220	83	1	5	64
Average Queue (ft)	90	17	0	0	9
95th Queue (ft)	167	59	1	6	38
Link Distance (ft)	1037		479		356
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25		25	
Storage Blk Time (%)	32	1	0		
Queuing Penalty (veh)	5	3	0		

Intersection: 2: Yosemite Avenue & WB SR 120 Off/On-Ramp

Movement	WB	WB	NB	SB
Directions Served	LT	R	LT	R
Maximum Queue (ft)	64	79	76	6
Average Queue (ft)	9	43	9	0
95th Queue (ft)	38	77	40	4
Link Distance (ft)	1129		356	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25		50
Storage Blk Time (%)	1	9	0	
Queuing Penalty (veh)	1	1	0	

Network Summary

Network wide Queuing Penalty: 10

**APPENDIX C –
DESIGN YEAR 2045 NO PROJECT
AM PEAK HOUR
SYNCHRO INPUT DATA AND
SIMTRAFFIC VERSION 8.0 ANALYSIS**





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	440	0	450	0	0	0	0	145	150	160	620	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		1	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.990	
Satd. Flow (prot)	1570	0	1404	0	0	0	0	1652	1404	0	1636	0
Flt Permitted	0.950										0.990	
Satd. Flow (perm)	1570	0	1404	0	0	0	0	1652	1404	0	1636	0
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		19028			1163			10779			408	
Travel Time (s)		288.3			17.6			210.0			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	484	0	495	0	0	0	0	159	165	176	681	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	484	0	495	0	0	0	0	159	165	0	857	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	83.5%
ICU Level of Service	E
Analysis Period (min)	15



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗		↕			↕	↗
Volume (vph)	0	0	0	480	0	440	260	325	0	0	300	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		25	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.950			0.978				
Satd. Flow (prot)	0	0	0	0	1570	1404	0	1616	0	0	1652	1404
Flt Permitted					0.950			0.978				
Satd. Flow (perm)	0	0	0	0	1570	1404	0	1616	0	0	1652	1404
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		973			13670			408			6571	
Travel Time (s)		14.7			207.1			7.9			128.0	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	527	0	484	286	357	0	0	330	385
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	527	484	0	643	0	0	330	385
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	89.8%
ICU Level of Service	E
Analysis Period (min)	15

1: Yosemite Avenue & EB SR 120 Off/On-Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.1	0.0	0.0	0.0	0.5	0.7
Denied Del/Veh (s)	0.9	0.9	0.1	0.1	0.3	4.7	1.6
Total Delay (hr)	73.9	73.3	1.6	0.4	2.1	8.4	159.7
Total Del/Veh (s)	550.6	542.8	39.2	10.2	73.8	75.6	324.1
Total Stops	574	534	139	149	102	390	1888
Travel Dist (mi)	1467.5	1478.8	283.4	302.1	8.0	30.6	3570.4
Travel Time (hr)	107.2	107.0	9.8	9.3	2.5	9.9	245.6
Fuel Used (gal)	50.8	51.0	8.0	8.4	0.7	2.9	121.9
Vehicles Entered	438	441	138	148	101	389	1655
Vehicles Exited	311	317	139	148	101	389	1405
Hourly Exit Rate	311	317	139	148	101	389	1405
Input Volume	440	450	145	150	160	621	1966
% of Volume	71	70	96	99	63	63	71
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	1	1

2: Yosemite Avenue & WB SR 120 Off/On-Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	3.1	2.8	0.0	0.0	0.0	0.0	5.9
Denied Del/Veh (s)	23.6	22.3	0.0	0.0	0.1	0.1	10.6
Total Delay (hr)	143.8	133.1	3.8	4.6	28.6	2.7	316.6
Total Del/Veh (s)	1064.9	1037.1	65.6	66.8	330.6	27.3	551.1
Total Stops	513	483	202	245	304	387	2134
Travel Dist (mi)	862.7	804.6	15.8	19.3	360.4	419.3	2482.0
Travel Time (hr)	166.4	154.2	4.4	5.3	39.0	15.2	384.6
Fuel Used (gal)	50.4	46.7	1.4	1.7	15.8	12.2	128.1
Vehicles Entered	440	419	203	247	297	339	1945
Vehicles Exited	237	221	202	246	253	334	1493
Hourly Exit Rate	237	221	202	246	253	334	1493
Input Volume	480	440	260	325	300	350	2154
% of Volume	49	50	78	76	84	95	69
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	33	29	0	0	0	0	62

Total Network Performance

Denied Delay (hr)	6.6
Denied Del/Veh (s)	8.8
Total Delay (hr)	483.8
Total Del/Veh (s)	582.9
Total Stops	4022
Travel Dist (mi)	8231.1
Travel Time (hr)	712.2
Fuel Used (gal)	319.7
Vehicles Entered	2660
Vehicles Exited	1958
Hourly Exit Rate	1958
Input Volume	6874
% of Volume	28
Denied Entry Before	0
Denied Entry After	63

Arterial Level of Service: NB Yosemite Avenue

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
EB SR 120 Off/On-Ram	1	39.2	239.3	2.0	31
WB SR 120 Off/On-Ram	2	68.6	76.4	0.1	4
Total		107.8	315.7	2.1	24

Arterial Level of Service: SB Yosemite Avenue

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
WB SR 120 Off/On-Ram	2	330.6	450.4	1.2	10
EB SR 120 Off/On-Ram	1	75.3	91.9	0.1	3
Total		405.9	542.3	1.3	9

Intersection: 1: Yosemite Avenue & EB SR 120 Off/On-Ramp

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	T	R	LT
Maximum Queue (ft)	8797	85	264	120	370
Average Queue (ft)	4463	84	94	55	360
95th Queue (ft)	9120	94	205	96	371
Link Distance (ft)	19000		10746	10746	359
Upstream Blk Time (%)					8
Queuing Penalty (veh)					60
Storage Bay Dist (ft)		25			
Storage Blk Time (%)	72	52			
Queuing Penalty (veh)	324	231			

Intersection: 2: Yosemite Avenue & WB SR 120 Off/On-Ramp

Movement	WB	WB	NB	SB	SB
Directions Served	LT	R	LT	T	R
Maximum Queue (ft)	13698	85	371	1509	1111
Average Queue (ft)	8187	82	302	866	281
95th Queue (ft)	15007	105	452	1910	903
Link Distance (ft)	13639		359	6526	6526
Upstream Blk Time (%)	14		6		
Queuing Penalty (veh)	0		33		
Storage Bay Dist (ft)		25			
Storage Blk Time (%)	86	32			
Queuing Penalty (veh)	380	156			

Network Summary

Network wide Queuing Penalty: 1184

**APPENDIX D –
DESIGN YEAR 2045 NO PROJECT
PM PEAK HOUR
SYNCHRO INPUT DATA AND
SIMTRAFFIC VERSION 8.0 ANALYSIS**



Lanes, Volumes, Timings Design Year 2045 No Project Conditions - PM Peak Hour
 1: Yosemite Avenue & EB SR 120 Off/On-Ramp 2/9/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	555	0	365	0	0	0	0	675	560	470	215	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		1	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.850						0.850			
Fl _t Protected	0.950										0.967	
Satd. Flow (prot)	1597	0	1429	0	0	0	0	1681	1429	0	1626	0
Fl _t Permitted	0.950										0.967	
Satd. Flow (perm)	1597	0	1429	0	0	0	0	1681	1429	0	1626	0
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		19028			1163			10779			408	
Travel Time (s)		288.3			17.6			210.0			7.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	597	0	392	0	0	0	0	726	602	505	231	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	597	0	392	0	0	0	0	726	602	0	736	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	113.6%
Analysis Period (min)	15
	ICU Level of Service H



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	↶
Volume (vph)	0	0	0	220	0	240	460	770	0	0	465	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		25	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.950			0.982				
Satd. Flow (prot)	0	0	0	0	1597	1429	0	1651	0	0	1681	1429
Flt Permitted					0.950			0.982				
Satd. Flow (perm)	0	0	0	0	1597	1429	0	1651	0	0	1681	1429
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		973			13670			408			6571	
Travel Time (s)		14.7			207.1			7.9			128.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	237	0	258	495	828	0	0	500	484
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	237	258	0	1323	0	0	500	484
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	116.0%
ICU Level of Service	H
Analysis Period (min)	15

1: Yosemite Avenue & EB SR 120 Off/On-Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.3	0.3	0.0	0.0	0.4	0.2	1.3
Denied Del/Veh (s)	2.2	2.7	0.2	0.3	4.2	5.8	1.8
Total Delay (hr)	209.8	133.0	248.5	94.5	7.4	3.5	696.7
Total Del/Veh (s)	1212.3	1211.8	1200.7	557.9	84.2	85.6	883.2
Total Stops	636	432	811	1214	309	145	3547
Travel Dist (mi)	1375.1	871.5	955.6	993.5	24.4	11.5	4231.5
Travel Time (hr)	241.3	152.9	276.1	123.6	8.8	4.1	806.9
Fuel Used (gal)	76.2	48.3	78.7	47.2	2.5	1.2	254.0
Vehicles Entered	553	351	672	562	309	145	2592
Vehicles Exited	211	135	273	402	309	146	1476
Hourly Exit Rate	211	135	273	402	309	146	1476
Input Volume	555	365	675	560	470	216	2840
% of Volume	38	37	40	72	66	68	52
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	5	4	0	0	1	1	11

2: Yosemite Avenue & WB SR 120 Off/On-Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	0.4	0.0	0.0	0.2	0.2	0.2
Total Delay (hr)	15.8	16.6	4.2	6.8	110.6	20.5	174.4
Total Del/Veh (s)	249.9	233.4	78.3	80.1	829.3	159.6	326.9
Total Stops	263	293	183	291	541	937	2508
Travel Dist (mi)	539.3	615.2	14.6	23.4	462.7	539.3	2194.3
Travel Time (hr)	28.1	30.8	4.7	7.5	123.9	36.5	231.6
Fuel Used (gal)	16.6	18.6	1.4	2.2	36.0	19.7	94.5
Vehicles Entered	210	240	186	298	453	443	1830
Vehicles Exited	188	217	187	297	266	413	1568
Hourly Exit Rate	188	217	187	297	266	413	1568
Input Volume	220	240	460	770	465	450	2605
% of Volume	86	90	41	39	57	92	60
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Denied Delay (hr)	1.4
Denied Del/Veh (s)	1.4
Total Delay (hr)	875.1
Total Del/Veh (s)	812.3
Total Stops	6055
Travel Dist (mi)	7910.9
Travel Time (hr)	1094.0
Fuel Used (gal)	398.3
Vehicles Entered	3484
Vehicles Exited	2110
Hourly Exit Rate	2110
Input Volume	8975
% of Volume	24
Denied Entry Before	0
Denied Entry After	11

Arterial Level of Service: NB Yosemite Avenue

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
EB SR 120 Off/On-Ram	1	1200.7	1334.2	2.0	6
WB SR 120 Off/On-Ram	2	79.2	87.1	0.1	3
Total		1279.9	1421.3	2.1	5

Arterial Level of Service: SB Yosemite Avenue

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
WB SR 120 Off/On-Ram	2	829.3	929.5	1.2	5
EB SR 120 Off/On-Ram	1	85.8	103.5	0.1	3
Total		915.1	1033.0	1.3	5

Intersection: 1: Yosemite Avenue & EB SR 120 Off/On-Ramp

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	T	R	LT
Maximum Queue (ft)	17811	85	10248	10172	374
Average Queue (ft)	9695	75	5875	5006	362
95th Queue (ft)	17941	119	10566	10052	371
Link Distance (ft)	19000		10746	10746	359
Upstream Blk Time (%)	1		3	0	11
Queuing Penalty (veh)	0		0	0	78
Storage Bay Dist (ft)		25			
Storage Blk Time (%)	92	17			
Queuing Penalty (veh)	337	97			

Intersection: 2: Yosemite Avenue & WB SR 120 Off/On-Ramp

Movement	WB	WB	NB	SB	SB
Directions Served	LT	R	LT	T	R
Maximum Queue (ft)	1981	85	372	5299	5043
Average Queue (ft)	979	77	361	2938	2011
95th Queue (ft)	2454	114	371	5487	4825
Link Distance (ft)	13639		359	6526	6526
Upstream Blk Time (%)			9		
Queuing Penalty (veh)			107		
Storage Bay Dist (ft)		25			
Storage Blk Time (%)	82	34			
Queuing Penalty (veh)	197	74			

Network Summary

Network wide Queuing Penalty: 890

**APPENDIX E –
DESIGN YEAR 2045 WITH PROJECT
AM PEAK HOUR
SYNCHRO INPUT DATA AND
SIMTRAFFIC VERSION 8.0 ANALYSIS**



Lanes, Volumes, Timings

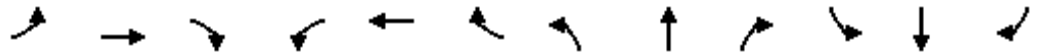
Design Year 2045 With Project Conditions- AM Peak Hour

1: Yosemite Avenue & EB SR 120 Off/On-Ramp

2/9/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	440	0	450	0	0	0	0	145	150	160	620	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	475		300	0		0	0		500	0		0
Storage Lanes	2		1	0		0	0		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3045	0	2472	0	0	0	0	3139	1404	1570	1652	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	3045	0	2472	0	0	0	0	3139	1404	1570	1652	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			495						165			
Link Speed (mph)		45			45			35				35
Link Distance (ft)		976			522			919				724
Travel Time (s)		14.8			7.9			17.9				14.1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	484	0	495	0	0	0	0	159	165	176	681	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	484	0	495	0	0	0	0	159	165	176	681	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm					NA	Perm	Prot	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4		4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0		12.0					20.0	20.0	12.0	23.0	
Total Split (s)	27.0		27.0					39.0	39.0	24.0	63.0	
Total Split (%)	30.0%		30.0%					43.3%	43.3%	26.7%	70.0%	
Maximum Green (s)	23.0		23.0					35.0	35.0	20.0	59.0	
Yellow Time (s)	3.5		3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0		3.0					3.0	3.0	3.0	3.0	
Recall Mode	None		None					C-Min	C-Min	None	C-Min	
Walk Time (s)								5.0	5.0		5.0	
Flash Dont Walk (s)								11.0	11.0		14.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)								3	3		3	
Act Effct Green (s)	24.0		24.0					39.0	39.0	15.0	58.0	
Actuated g/C Ratio	0.27		0.27					0.43	0.43	0.17	0.64	
v/c Ratio	0.60		0.48					0.12	0.24	0.67	0.64	
Control Delay	31.8		4.2					17.6	4.2	35.9	12.9	
Queue Delay	0.0		0.0					0.0	0.0	0.0	0.0	
Total Delay	31.8		4.2					17.6	4.2	35.9	12.9	
LOS	C		A					B	A	D	B	
Approach Delay								10.8			17.6	
Approach LOS								B			B	
90th %ile Green (s)	23.0		23.0					35.0	35.0	20.0	59.0	
90th %ile Term Code	Max		Max					Coord	Coord	Max	Coord	
70th %ile Green (s)	30.9		30.9					29.4	29.4	17.7	51.1	
70th %ile Term Code	Max		Max					Coord	Coord	Gap	Coord	
50th %ile Green (s)	26.7		26.7					36.0	36.0	15.3	55.3	
50th %ile Term Code	Gap		Gap					Coord	Coord	Gap	Coord	
30th %ile Green (s)	22.4		22.4					42.8	42.8	12.8	59.6	
30th %ile Term Code	Gap		Gap					Coord	Coord	Gap	Coord	
10th %ile Green (s)	17.0		17.0					51.8	51.8	9.2	65.0	
10th %ile Term Code	Gap		Gap					Coord	Coord	Gap	Coord	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	16.7
Intersection LOS:	B
Intersection Capacity Utilization	55.0%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 1: Yosemite Avenue & EB SR 120 Off/On-Ramp





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	480	440	325	260	350	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700	250		325	500	
Storage Lanes	1	1		1	1	
Taper Length (ft)	60				60	
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95
Fr _t		0.850		0.850		
Fl _t Protected	0.950				0.950	
Satd. Flow (prot)	1570	2472	3139	1404	1570	3139
Fl _t Permitted	0.950				0.950	
Satd. Flow (perm)	1570	2472	3139	1404	1570	3139
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		484		190		
Link Speed (mph)	45		35			35
Link Distance (ft)	1549		724			1417
Travel Time (s)	23.5		14.1			27.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	527	484	357	286	385	330
Shared Lane Traffic (%)						
Lane Group Flow (vph)	527	484	357	286	385	330
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		8			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	pm+ov	Prot	NA
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	8	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	4.0	6.0
Minimum Split (s)	12.0	12.0	21.0	12.0	8.0	12.0
Total Split (s)	39.0	39.0	21.0	39.0	30.0	51.0
Total Split (%)	43.3%	43.3%	23.3%	43.3%	33.3%	56.7%
Maximum Green (s)	35.0	35.0	17.0	35.0	26.0	47.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	None	None	C-Min
Walk Time (s)			5.0			
Flash Dont Walk (s)			12.0			

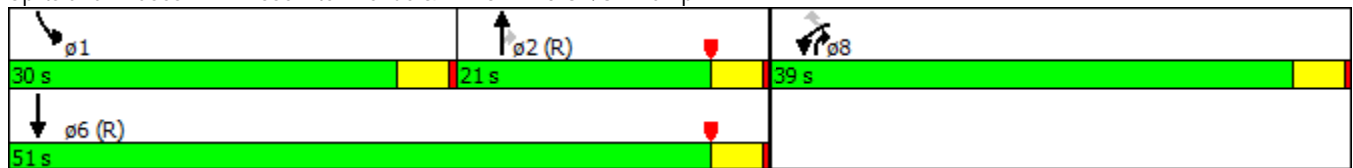


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Pedestrian Calls (#/hr)			3			
Act Effct Green (s)	35.4	35.4	17.9	57.3	24.7	46.6
Actuated g/C Ratio	0.39	0.39	0.20	0.64	0.27	0.52
v/c Ratio	0.86	0.38	0.57	0.30	0.90	0.20
Control Delay	40.6	2.8	19.7	5.8	56.0	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	2.8	19.7	5.8	56.0	12.1
LOS	D	A	B	A	E	B
Approach Delay	22.5		13.5			35.8
Approach LOS	C		B			D
90th %ile Green (s)	35.0	35.0	17.0	35.0	26.0	47.0
90th %ile Term Code	Max	Max	Coord	Max	Max	Coord
70th %ile Green (s)	35.0	35.0	17.0	35.0	26.0	47.0
70th %ile Term Code	Max	Max	Coord	Max	Max	Coord
50th %ile Green (s)	35.7	35.7	16.3	35.7	26.0	46.3
50th %ile Term Code	Max	Max	Coord	Max	Max	Coord
30th %ile Green (s)	38.4	38.4	13.9	38.4	25.7	43.6
30th %ile Term Code	Max	Max	Coord	Max	Gap	Coord
10th %ile Green (s)	32.7	32.7	25.5	32.7	19.8	49.3
10th %ile Term Code	Gap	Gap	Coord	Gap	Gap	Coord

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 36 (40%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 24.1
 Intersection Capacity Utilization 65.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 2: Yosemite Avenue & WB SR 120 Off/On-Ramp



1: Yosemite Avenue & EB SR 120 Off/On-Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	3.3	1.7	0.5	3.7	0.0	0.0	1.5
Total Del/Veh (s)	29.0	18.2	20.7	4.0	25.1	23.8	22.1
Total Stops	330	308	83	88	125	322	1256
Stop/Veh	0.73	0.67	0.58	0.59	0.80	0.50	0.63
Travel Dist (mi)	79.0	80.7	23.3	24.3	21.9	89.0	318.3
Travel Time (hr)	6.3	5.0	1.5	1.2	1.8	7.3	23.1
Avg Speed (mph)	14	17	16	24	12	12	14
Fuel Used (gal)	3.1	2.4	0.9	0.8	1.0	4.7	12.8
Vehicles Entered	443	455	142	148	155	630	1973
Vehicles Exited	441	454	142	149	155	632	1973
Hourly Exit Rate	441	454	142	149	155	632	1973
Input Volume	440	450	145	150	160	621	1966
% of Volume	100	101	98	99	97	102	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: Yosemite Avenue & WB SR 120 Off/On-Ramp Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	3.1	1.7	0.0	0.0	2.6	0.4	1.5
Total Del/Veh (s)	35.2	9.9	26.5	10.1	35.5	11.4	23.3
Total Stops	384	262	250	78	277	124	1375
Stop/Veh	0.78	0.59	0.56	0.55	0.81	0.41	0.63
Travel Dist (mi)	137.5	125.1	60.9	19.7	86.3	77.1	506.7
Travel Time (hr)	8.8	4.9	5.5	1.1	6.3	3.2	29.8
Avg Speed (mph)	16	27	11	18	14	24	18
Fuel Used (gal)	4.3	3.1	3.6	0.8	3.1	2.5	17.4
Vehicles Entered	485	441	442	141	334	298	2141
Vehicles Exited	485	440	443	142	335	298	2143
Hourly Exit Rate	485	440	443	142	335	298	2143
Input Volume	480	440	325	260	350	300	2154
% of Volume	101	100	136	55	96	99	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	2.2
Total Del/Veh (s)	35.5
Total Stops	2632
Stop/Veh	0.93
Travel Dist (mi)	1462.2
Travel Time (hr)	75.9
Avg Speed (mph)	20
Fuel Used (gal)	58.0
Vehicles Entered	2747
Vehicles Exited	2750
Hourly Exit Rate	2750
Input Volume	7495
% of Volume	37
Denied Entry Before	0
Denied Entry After	0

Arterial Level of Service: NB Yosemite Avenue

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
EB SR 120 Off/On-Ram	1	20.7	38.1	0.2	17
WB SR 120 Off/On-Ram	2	6.2	8.2	0.1	60
Total		27.0	46.4	0.3	24

Arterial Level of Service: SB Yosemite Avenue

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
WB SR 120 Off/On-Ram	2	11.4	38.5	0.3	25
EB SR 120 Off/On-Ram	1	28.0	42.2	0.1	12
Total		39.4	80.7	0.4	18

Intersection: 1: Yosemite Avenue & EB SR 120 Off/On-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	R	T	T	R	L	T
Maximum Queue (ft)	272	344	319	264	33	191	93	270	522
Average Queue (ft)	124	185	153	93	1	75	43	109	299
95th Queue (ft)	245	296	259	214	16	151	82	206	489
Link Distance (ft)			936		863	863		655	655
Upstream Blk Time (%)									0
Queuing Penalty (veh)									0
Storage Bay Dist (ft)	475	475		300			500		
Storage Blk Time (%)			0	0					
Queuing Penalty (veh)			1	0					

Intersection: 2: Yosemite Avenue & WB SR 120 Off/On-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	R	T	T	R	L	T	T
Maximum Queue (ft)	516	278	158	263	292	200	410	183	141
Average Queue (ft)	277	105	50	106	133	67	212	60	50
95th Queue (ft)	461	250	111	230	253	153	356	131	112
Link Distance (ft)		1496		655	655			1366	1366
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	700		250			325	500		
Storage Blk Time (%)	0	0			0		0		
Queuing Penalty (veh)	1	0			0		0		

Network Summary

Network wide Queuing Penalty: 2

Intersection: 1: Yosemite Avenue & EB SR 120 Off/On-Ramp

Phase	1	2	4	6
Movement(s) Served	SBL	NBT	EBL	SBT
Maximum Green (s)	20.0	35.0	23.0	59.0
Minimum Green (s)	6.0	6.0	6.0	6.0
Recall	None	C-Min	None	C-Min
Avg. Green (s)	15.3	31.8	32.8	49.4
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	7	0	0	0
Cycles @ Minimum (%)	5	0	0	0
Cycles Maxed Out (%)	26	100	88	100
Cycles with Peds (%)	0	5	0	7

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 2: Yosemite Avenue & WB SR 120 Off/On-Ramp

Phase	1	2	6	8
Movement(s) Served	SBL	NBT	SBT	WBL
Maximum Green (s)	26.0	17.0	47.0	35.0
Minimum Green (s)	4.0	6.0	6.0	6.0
Recall	None	C-Min	C-Min	None
Avg. Green (s)	24.6	18.6	47.6	35.3
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	71	100	100	98
Cycles with Peds (%)	0	7	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

**APPENDIX F –
DESIGN YEAR 2045 WITH PROJECT
PM PEAK HOUR
SYNCHRO INPUT DATA AND
SIMTRAFFIC VERSION 8.0 ANALYSIS**



Lanes, Volumes, Timings

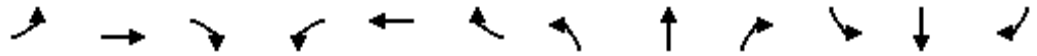
Design Year 2045 With Project Conditions- PM Peak Hour

1: Yosemite Avenue & EB SR 120 Off/On-Ramp

2/9/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	555	0	365	0	0	0	0	675	560	470	215	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	475		300	0		0	0		500	0		0
Storage Lanes	2		1	0		0	0		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3099	0	2515	0	0	0	0	3195	1429	1597	1681	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	3099	0	2515	0	0	0	0	3195	1429	1597	1681	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			392						532			
Link Speed (mph)		45			45			35				35
Link Distance (ft)		976			522			919				724
Travel Time (s)		14.8			7.9			17.9				14.1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	597	0	392	0	0	0	0	726	602	505	231	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	597	0	392	0	0	0	0	726	602	505	231	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm					NA	Perm	Prot	NA	
Protected Phases								2		1	6	
Permitted Phases	4		4						2			
Detector Phase	4		4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0		12.0					20.0	20.0	12.0	23.0	
Total Split (s)	24.5		24.5					32.0	32.0	33.5	65.5	
Total Split (%)	27.2%		27.2%					35.6%	35.6%	37.2%	72.8%	
Maximum Green (s)	20.5		20.5					28.0	28.0	29.5	61.5	
Yellow Time (s)	3.5		3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5					0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0		3.0					3.0	3.0	3.0	3.0	
Recall Mode	None		None					C-Min	C-Min	None	C-Min	
Walk Time (s)								5.0	5.0		5.0	
Flash Dont Walk (s)								11.0	11.0		14.0	

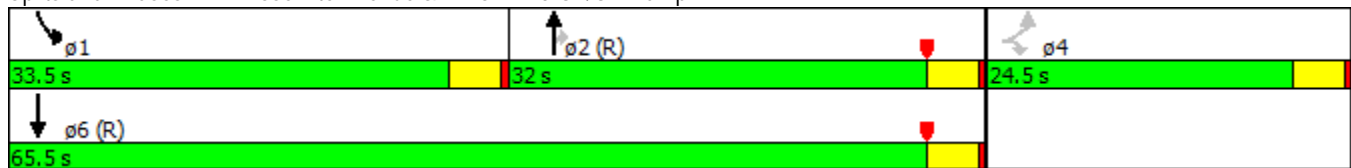


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)								3	3		3	
Act Effct Green (s)	20.4		20.4					28.0	28.0	29.6	61.6	
Actuated g/C Ratio	0.23		0.23					0.31	0.31	0.33	0.68	
v/c Ratio	0.85		0.45					0.73	0.74	0.96	0.20	
Control Delay	46.6		5.0					32.8	10.6	57.2	21.9	
Queue Delay	0.0		0.0					0.0	0.0	0.0	0.0	
Total Delay	46.6		5.0					32.8	10.6	57.2	21.9	
LOS	D		A					C	B	E	C	
Approach Delay								22.7			46.2	
Approach LOS								C			D	
90th %ile Green (s)	20.5		20.5					28.0	28.0	29.5	61.5	
90th %ile Term Code	Max		Max					Coord	Coord	Max	Coord	
70th %ile Green (s)	20.5		20.5					28.0	28.0	29.5	61.5	
70th %ile Term Code	Max		Max					Coord	Coord	Max	Coord	
50th %ile Green (s)	20.5		20.5					28.0	28.0	29.5	61.5	
50th %ile Term Code	Max		Max					Coord	Coord	Max	Coord	
30th %ile Green (s)	20.5		20.5					28.0	28.0	29.5	61.5	
30th %ile Term Code	Max		Max					Coord	Coord	Max	Coord	
10th %ile Green (s)	19.9		19.9					28.1	28.1	30.0	62.1	
10th %ile Term Code	Gap		Gap					Coord	Coord	Gap	Coord	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.96
Intersection Signal Delay:	30.8
Intersection LOS:	C
Intersection Capacity Utilization	70.5%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 1: Yosemite Avenue & EB SR 120 Off/On-Ramp





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	220	240	770	460	450	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700	250		325	500	
Storage Lanes	1	1		1	1	
Taper Length (ft)	60				60	
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95
Fr _t		0.850		0.850		
Fl _t Protected	0.950				0.950	
Satd. Flow (prot)	1597	2515	3195	1429	1597	3195
Fl _t Permitted	0.950				0.950	
Satd. Flow (perm)	1597	2515	3195	1429	1597	3195
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		258		183		
Link Speed (mph)	45		35			35
Link Distance (ft)	1549		724			1417
Travel Time (s)	23.5		14.1			27.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	237	258	828	495	484	500
Shared Lane Traffic (%)						
Lane Group Flow (vph)	237	258	828	495	484	500
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		8			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	pm+ov	Prot	NA
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	8	2	8	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	6.0	4.0	6.0
Minimum Split (s)	12.0	12.0	21.0	12.0	8.0	12.0
Total Split (s)	21.5	21.5	32.5	21.5	36.0	68.5
Total Split (%)	23.9%	23.9%	36.1%	23.9%	40.0%	76.1%
Maximum Green (s)	17.5	17.5	28.5	17.5	32.0	64.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	None	None	C-Min
Walk Time (s)			5.0			
Flash Dont Walk (s)			12.0			

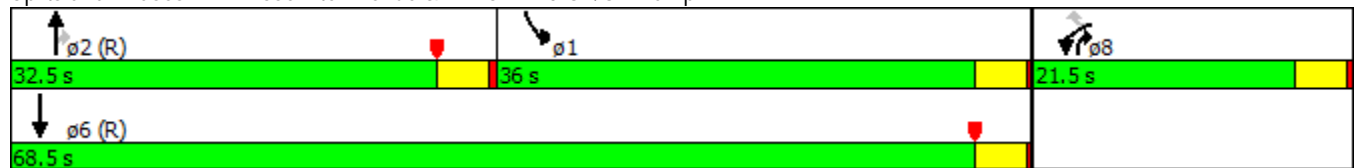


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Pedestrian Calls (#/hr)			3			
Act Effct Green (s)	17.2	17.2	30.4	51.6	30.4	64.8
Actuated g/C Ratio	0.19	0.19	0.34	0.57	0.34	0.72
v/c Ratio	0.78	0.37	0.77	0.55	0.90	0.22
Control Delay	53.5	5.9	8.3	9.1	49.6	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	5.9	8.3	9.1	49.6	4.5
LOS	D	A	A	A	D	A
Approach Delay	28.7		8.6			26.7
Approach LOS	C		A			C
90th %ile Green (s)	17.5	17.5	28.5	17.5	32.0	64.5
90th %ile Term Code	Max	Max	Coord	Max	Max	Coord
70th %ile Green (s)	17.5	17.5	28.5	17.5	32.0	64.5
70th %ile Term Code	Max	Max	Coord	Max	Max	Coord
50th %ile Green (s)	17.5	17.5	28.5	17.5	32.0	64.5
50th %ile Term Code	Max	Max	Coord	Max	Max	Coord
30th %ile Green (s)	18.4	18.4	28.5	18.4	31.1	63.6
30th %ile Term Code	Max	Max	Coord	Max	Gap	Coord
10th %ile Green (s)	15.1	15.1	38.0	15.1	24.9	66.9
10th %ile Term Code	Gap	Gap	Coord	Gap	Gap	Coord

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 39 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 18.5
 Intersection LOS: B
 Intersection Capacity Utilization 68.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 2: Yosemite Avenue & WB SR 120 Off/On-Ramp



1: Yosemite Avenue & EB SR 120 Off/On-Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	3.4	1.8	5.1	6.5	0.0	0.0	3.4
Total Del/Veh (s)	48.4	9.7	48.0	17.0	41.6	18.1	33.6
Total Stops	598	274	678	453	347	206	2556
Stop/Veh	1.07	0.75	0.99	0.81	0.78	0.85	0.89
Travel Dist (mi)	97.6	64.6	111.0	91.1	62.3	33.7	460.4
Travel Time (hr)	10.8	3.1	13.3	6.8	7.2	2.4	43.7
Avg Speed (mph)	9	22	9	16	9	14	11
Fuel Used (gal)	4.5	1.8	5.9	3.7	2.8	1.7	20.4
Vehicles Entered	548	364	677	557	440	238	2824
Vehicles Exited	546	364	677	556	435	239	2817
Hourly Exit Rate	546	364	677	556	435	239	2817
Input Volume	555	365	675	560	470	216	2840
% of Volume	98	100	100	99	93	111	99
Denied Entry Before	0	0	0	1	0	0	1
Denied Entry After	0	0	0	1	0	0	1

2: Yosemite Avenue & WB SR 120 Off/On-Ramp Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	3.1	0.8	0.0	0.0	2.4	0.6	0.9
Total Del/Veh (s)	42.1	10.9	16.5	10.4	34.3	7.0	18.4
Total Stops	190	179	287	50	362	118	1186
Stop/Veh	0.89	0.74	0.37	0.11	0.79	0.25	0.45
Travel Dist (mi)	60.2	68.2	105.1	64.1	117.2	121.0	535.9
Travel Time (hr)	4.2	2.6	7.1	3.7	8.3	4.5	30.4
Avg Speed (mph)	15	26	15	18	15	27	18
Fuel Used (gal)	2.1	1.9	5.6	2.6	4.4	3.9	20.5
Vehicles Entered	212	240	763	460	452	467	2594
Vehicles Exited	211	240	763	460	453	467	2594
Hourly Exit Rate	211	240	763	460	453	467	2594
Input Volume	220	240	770	460	450	465	2605
% of Volume	96	100	99	100	101	100	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	3.4
Total Del/Veh (s)	43.5
Total Stops	3820
Stop/Veh	1.06
Travel Dist (mi)	1853.1
Travel Time (hr)	107.2
Avg Speed (mph)	18
Fuel Used (gal)	78.4
Vehicles Entered	3517
Vehicles Exited	3509
Hourly Exit Rate	3509
Input Volume	11035
% of Volume	32
Denied Entry Before	1
Denied Entry After	1

Arterial Level of Service: NB Yosemite Avenue

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
EB SR 120 Off/On-Ram	1	48.0	69.9	0.2	10
WB SR 120 Off/On-Ram	2	20.8	34.8	0.1	14
Total		68.8	104.7	0.3	11

Arterial Level of Service: SB Yosemite Avenue

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
WB SR 120 Off/On-Ram	2	7.0	34.3	0.3	29
EB SR 120 Off/On-Ram	1	5.9	18.7	0.1	26
Total		13.0	53.0	0.4	28

Intersection: 1: Yosemite Avenue & EB SR 120 Off/On-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	R	T	T	R	L	T
Maximum Queue (ft)	374	411	208	132	668	739	521	527	267
Average Queue (ft)	209	254	81	37	212	377	198	244	157
95th Queue (ft)	320	370	150	89	567	710	463	448	254
Link Distance (ft)			936		863	863		655	655
Upstream Blk Time (%)					1	3		0	
Queuing Penalty (veh)					0	0		0	
Storage Bay Dist (ft)	475	475		300			500		
Storage Blk Time (%)	0	0				5	0		
Queuing Penalty (veh)	0	1				29	0		

Intersection: 2: Yosemite Avenue & WB SR 120 Off/On-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	R	T	T	R	L	T	T
Maximum Queue (ft)	324	167	103	235	277	229	486	328	191
Average Queue (ft)	145	69	32	114	124	46	258	96	21
95th Queue (ft)	268	126	77	199	212	149	418	219	102
Link Distance (ft)		1496		655	655			1366	1366
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	700		250			325	500		
Storage Blk Time (%)					0	0	0	0	
Queuing Penalty (veh)					0	0	1	0	

Intersection: 3: Bend

Movement	EB	EB
Directions Served	T	T
Maximum Queue (ft)	352	304
Average Queue (ft)	20	18
95th Queue (ft)	173	160
Link Distance (ft)	450	450
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 32

Intersection: 1: Yosemite Avenue & EB SR 120 Off/On-Ramp

Phase	1	2	4	6
Movement(s) Served	SBL	NBT	EBL	SBT
Maximum Green (s)	29.5	28.0	20.5	61.5
Minimum Green (s)	6.0	6.0	6.0	6.0
Recall	None	C-Min	None	C-Min
Avg. Green (s)	29.2	29.1	20.5	61.5
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	90	100	98	100
Cycles with Peds (%)	0	8	0	5

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 2: Yosemite Avenue & WB SR 120 Off/On-Ramp

Phase	1	2	6	8
Movement(s) Served	SBL	NBT	SBT	WBL
Maximum Green (s)	32.0	28.5	64.5	17.5
Minimum Green (s)	4.0	6.0	6.0	6.0
Recall	None	C-Min	C-Min	None
Avg. Green (s)	30.5	28.6	64.7	19.6
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	78	100	100	100
Cycles with Peds (%)	0	5	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Attachment G

Transportation Planning Scoping Information Sheet

District 10 Transportation Planning Scoping Information Sheet

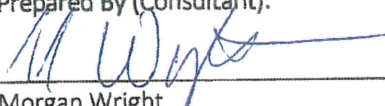
The Transportation Planning Scoping Information sheet (TPSIS) is a communication document to present the planning level purpose and need to the Project Nomination Scoping Team early in the project initiation phase. The Project Scoping Teams (PST) should use the TPSIS to verify that the proposed project remains consistent with the planning level purpose and need and is consistent with planning concepts, statewide goals, and planning decisions.

Project EA/ID: EA 10-1G760 / 1017000160	Co/Route/PM: SJ / 120 / R0.9/R1.8
Project Description: SR 120/Yosemite Ave Interchange on State Route 120, between 0.43 miles west of Guthmiller Road, and 0.47 miles east of Guthmiller Road. Project proposes to improve SR 120/Yosemite Ave Interchange by widening the undercrossing (Guthmiller Road) to include four lanes, bike lanes, and sidewalk; adding traffic signals to SR 120 ramp terminal; and reconfiguring SR 120 connections.	
Comments:	

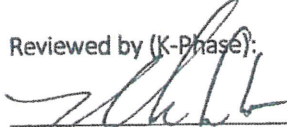
Project Scoping Team Information		
Title	Name	Phone Number
TPSIS Information Sheet Point of Contact	Nhan Cao	(209) 948-7112
Consultant Project Manager	Aaron Silva, Mark Thomas	(916) 403 5720
Caltrans Project Manager	Wuthy Seng	(209) 948 7854
Caltrans Oversight Design Engineer	Nomer J. Gutierrez	(209) 948-7079
Others		

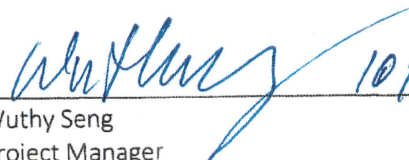
Transportation Planning Stakeholder Information		
Title	Name	Phone Number
Regional Planner	Morgan Wright	(916) 403-5757
System Planner		
Local Development Intergovernmental Review (LD-IGR) Planner		
Sustainable Planning Grant Coordinator		
Goods Movement Planner		
Transit Planner		
Bicycle and Pedestrian Coordinator		
Park and Ride Coordinator		
Native American Liaison		
Climate Change Coordinators/Liaison		

Prepared By (Consultant):


10/3/2018
 Morgan Wright (Date)
 Design Engineer

Reviewed by (K-Phase):


10/3/2018
 Nhan Cao, PE (Date)
 District Office of Project Initiation


10/08/18
 Wuthy Seng (Date)
 Project Manager

District 10 Transportation Planning Scoping Information Sheet

It is recognized that not every proposed project will require each section in the Transportation Planning Scoping Information Sheet to be filled out.

Section 1: System Planning

ROUTE SEGMENT AND PROJECT INFORMATION			
	Co/Route/ P.M.	Project EA/ID	Project Description
Choose Anchor Asset	SJ / 120 / R0.9/R1.8	1017000160 / EA 10-1G760	SR 120/Yosemite Ave Interchange on State Route 120, between 0.43 miles west of Guthmiller Road, and 0.47 miles east of Guthmiller Road. Project proposes to improve SR 120/Yosemite Ave Interchange by widening the undercrossing (Guthmiller Road) to include four lanes, bike lanes, and sidewalk; adding traffic signals to SR 120 ramp terminal; and reconfiguring SR 120 connections.
Planned/Programmed Caltrans Project (add as needed)	SJ / 120 / R0.5/R3.3	EA 10-1H150K	Project to widen SR 120 to 6-lanes.
Planned/Programmed Caltrans Project (add as needed)	SJ / 120 / R0.5/R3.3	EA 10-1F040K	Project to add HOV ramp metering along SR 120.

ROUTE DESIGNATIONS			
Freeway and Expressway	Yes	Scenic Highway	No
National Highway System	Yes	Truck Network Designation	Terminal Access (STAA)
Strategic Highway Network		Interregional Road System	
Federal Functional Classification	N/A	Strategic Interregional Corridor	
Access Control (yes/no)		Priority Interregional Facility	
Major Truck Route?: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>SR 120 identified as terminal access (STAA) route.</i>			
Please describe how the project will impact modal and intermodal facilities: Build out of proposed facilities will improve interchange operations as compared to the no-build alternative.			
Please identify if the project is consistent with the following documents:			
<input type="checkbox"/> Transportation Concept Report (TCR)	<input type="checkbox"/> District System Management Plan (DSMP)	<input type="checkbox"/> Corridor System Management Plan (CSMP)	
<input type="checkbox"/> Interregional Transportation Strategic Plan (ITSP)	<input type="checkbox"/> California Freight Mobility Plan (CFMP)	<input type="checkbox"/> State Highway Management Plan/10 Year SHOPP	
<input checked="" type="checkbox"/> Other (Feasibility Study, District Bike and Ped Plan, Regional Concept of Transportation Operations etc):			

District 10 Transportation Planning Scoping Information Sheet

Section 2: Local Development – Intergovernmental Review

LD-IGR		
Please provide the below LD-IGR information (if available) for any proposed local projects that may impact, directly or indirectly, the project.		
Description: Local projects that may impact this proposed project include the South Lathrop Specific Plan (SLSP), and Lathrop Gateway Business Park (LGBP). SLSP and LGBP land use types include: limited industrial, commercial office, and service commercial.		
Local Agency: City of Lathrop Michael King	Phone Number: (209) 941 7454 Email: mking@ci.lathrop.ca.us	
Caltrans LD-IGR Planner:	Phone Number: Email:	
Project Distance to Development(s): Less than 1-mile		
California Environmental Quality Act (CEQA) Status and Implementation Date: Approved EIR and CEQA		
Using the Geo-Based Tracking System (GTS) or older project files, is there promised transportation mitigation within the project vicinity?		<input type="checkbox"/> Yes (Please describe below) <input checked="" type="checkbox"/> No
	Regional/Local Partners Needs	Needs/Opportunities with Project
List mitigation including location, description, and expected construction timing:	Improved access and mobility	Project will provide improved access and mobility over no-build alternative

Section 3: Smart Mobility, Complete Streets, and Regional Planning

SMART MOBILITY FRAMEWORK PLACE TYPES			
Identify the SMF Place Type(s):			
<input type="checkbox"/> Urban Center	<input type="checkbox"/> Close-In Center	<input type="checkbox"/> Suburban Center	<input checked="" type="checkbox"/> Rural Settlement/Ag Land
<input type="checkbox"/> Urban Core	<input type="checkbox"/> Close-In Corridor	<input type="checkbox"/> Suburban Corridor	<input type="checkbox"/> Rural Towns
	<input type="checkbox"/> Close-In Neighborhood	<input type="checkbox"/> Suburban Dedicated Use Area	<input type="checkbox"/> Protected Lands
	<input type="checkbox"/> Compact Community	<input type="checkbox"/> Neighborhood	<input checked="" type="checkbox"/> Special Use Areas

District 10 Transportation Planning Scoping Information Sheet

3.1 Pedestrian Conditions

BICYCLE AND PEDESTRIAN CONDITIONS	
Describe the existing bicycle and pedestrian facilities within the project limits (e.g. bicycle/pedestrian accessibility; Class I, II, III, IV, signage; shoulder connections, sidewalks, on/off ramps, crosswalks, curb ramps; and bicycle/pedestrian counts etc.)	No existing dedicated bicycle and pedestrian facilities within project limits.
Describe the physical and/or perceived impediments for bicyclists and pedestrians (e.g. narrow shoulders or sidewalks, connectivity gaps, curb gutters, utility boxes, high vehicle speeds, or AADT)	Narrow roadway shoulders, no sidewalks along Guthmiller Rd and Yosemite Ave.
Does the highway segment function as a "Main Street" or a "Safe Route to School"?	Highway segment not main street or safe route to school.
If applicable, is the Pedestrian Plan or comprehensive planning study included in the ADA Transition Plan?	N/A
Is the proposed project located on a corridor that accommodates or bisect recreational trails (e.g. California Coastal Trail, backpacking, hiking, or equestrian trails)	No
Contact information for bicycle, pedestrian or disabled advisory advocates.	N/A
Regional/Local Partners Needs	
Describe the bicycle and pedestrian needs as identified in an existing Bicycle/Pedestrian Plan or comprehensive planning study for the corridor, if any. (e.g. alternate parallel routes, gap closures for bicycle, pedestrian, or ADA facilities)	Existing condition does not provide dedicated facilities for bicycle and pedestrian circulation (No sidewalks. No bike lanes.)
Needs/Opportunities with Project	
	Neighboring developments providing wide sidewalks to allow for pedestrian circulation; pedestrian facilities will be extended on local streets through project.

District 10 Transportation Planning Scoping Information Sheet

3.2 Transit Conditions

TRANSIT CONDITIONS	
What are the existing transit accommodations, if any? (e.g., such as bus stops or active transit line)	No existing transit accommodations within project limits
Are there existing transit or proposed accommodations on intersecting local roadways?	No proposed transit accommodations within project limits; S. Lathrop Specific plan purposes integration with Lathrop transit system and standards
Where is the nearest Park and Ride Lot? Who owns/maintains?	http://www.dot.ca.gov/trafficops/tm/docs/d10_prkride.pdf
Contact information for local transit provider.	Nearest park and rides are lot ID No. 1004 (STA) & 1007 (SJ) along SR 99 San Joaquin Regional Transit District: 800 469 8674 Public Works Department: 209 941 7430
Regional/Local Partners Needs	Needs/Opportunities with Project
Describe transit facility needs identified in short-and long-range transit plans and RTP. Describe how these future plans relate to the corridor.	Project will improve facilities allowing safer and more efficient transportation of foods and goods.

3.3 Local and Regional Planning

LOCAL AND REGIONAL PLANNING	
MPO/RTPA and Contact Name:	San Joaquin Council of Governments, RTPA
Local County/City and Contact Name:	Michael King City of Lathrop
Title and web-link to most current Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS)	http://www.sicog.org/DocumentCenter/View/4196/SJCOG-2018-RTP-SCS-FEIR---FINAL
Is the proposed Caltrans project consistent with local and regional plans (General Plan, RTP)? If not, please explain	Final Programmatic Environmental Impact Report SCH#2017032042 Yes. Proposed plan consistent with City General Plan
Provide nexus between the RTP objectives and the proposed project to establish the basis for the project purpose and need.	Local plans include widening Yosemite to (6) lanes & interchange improvements to SR 120/Yosemite – Proposed project includes both.

District 10 Transportation Planning Scoping Information Sheet

<p>List projects in Capital Improvement Programs or Regional Transportation Plans that show potential for coordination of project delivery with local or regional agencies. Are the projects fully funded in the RTP?"</p>	<p>Interchange Improvements will coordinate with following projects on CT facilities: SR 120 6-lane widening (EA 10-1H150K), and Ramp Metering (EA 10-1F040K)</p>
--	---

Section 4: Climate Change and Environmental Considerations

CLIMATE CHANGE AND ENVIRONMENTAL CONSIDERATIONS	
<p>Is there an adopted Climate Action Plan for the City or County in which the proposed project is located?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Is the corridor susceptibility to climate change factors such as increased flooding or sea level rise? If yes, please indicate which factors to the right.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Sea Level Rise/Storm Surge <input type="checkbox"/> Temperature Changes <input type="checkbox"/> Precipitation <input type="checkbox"/> Wildfire</p>
<p>What GHG measures are included in the Regional RTP/SCS's Environmental Impact Report (EIR) that can be implemented through the proposed project?</p>	<p>San Joaquin Valley, Climate Change Action Plan (CCAP) includes guidance for GHG evaluation and reduction measures.</p>
<p>Is the proposed project located on or near and of the following: sensitive habitat areas such as wetlands, native or sensitive species habitats, wildlife corridors, identified fish passage barrier, agricultural land?</p>	<p>Propose project is located near agricultural land, wetlands, and the San Joaquin River.</p>

AIR QUALITY MANAGEMENT
<p>Name of Air Quality Management District (AQMD): San Joaquin Valley Air Pollution Control District</p>
<p>Is the proposed project located in a Federal non-attainment or attainment maintenance area? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

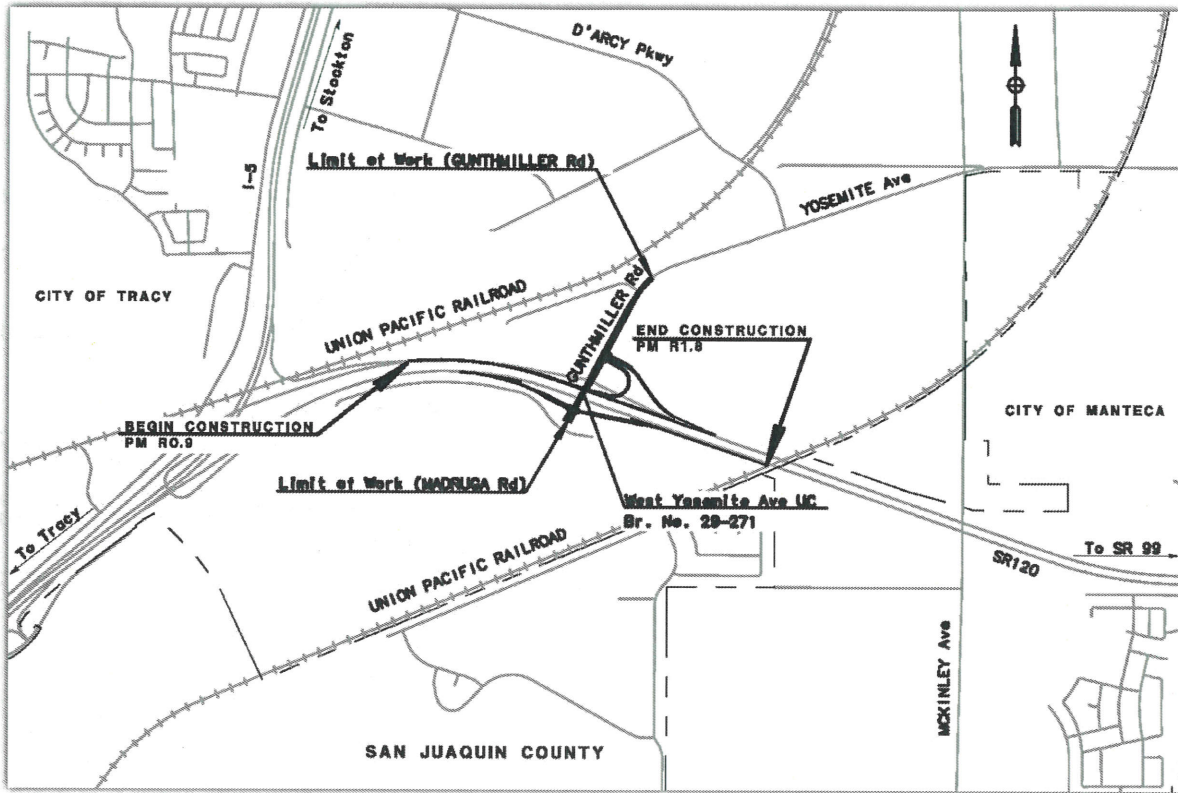
District 10 Transportation Planning Scoping Information Sheet

Section 5: Tribal Government Coordination

TRIBAL GOVERNMENT COORDINATION	
Is the proposed project within or near an Indian Reservation Rancheria, or Tribal Trust Land?	<input type="checkbox"/> Yes (Please provide name/names) <input checked="" type="checkbox"/> No
Does the proposed project involve trust lands (including tribal and individual allotted lands) outside of a reservation or Rancheria?	<input type="checkbox"/> Yes (Please provide name/names) <input checked="" type="checkbox"/> No
<p>You may skip the following three questions below only if both questions above have been checked no.</p> <ul style="list-style-type: none"> • <i>Has the Tribe or individual allotment holders been notified?</i> <input type="checkbox"/> Yes (Describe concerns/topics discussed) <input type="checkbox"/> No (Why not?) • <i>Has the Bureau of Indian Affairs (BIA) been notified (if trust lands and/or a Reservation/Rancheria is involved)?</i> <input type="checkbox"/> Yes (Describe concerns/topics discussed) <input type="checkbox"/> No (Why not?) • <i>Have all applicable tribal laws and regulations been reviewed for required coordination?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No 	
Is there an AB 52 letter on file from a Native American Tribe that would affect this project?	<input type="checkbox"/> Yes (Please provide Tribal name(s) and letter details). <input checked="" type="checkbox"/> No
Has the Tribal Government been contacted?	<input type="checkbox"/> Yes (Describe concerns/topics discussed) <input checked="" type="checkbox"/> No (Why not)
Does the Tribe have a Tribal Employment Rights Office/Ordinance (TERO)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> • <i>Has the TERO been reviewed for required coordination?</i> • <i>Is there a related Memorandum of Understanding (MOU) between the District and the Tribe?</i> 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does Caltrans have other MOUs with the Tribe?	<input type="checkbox"/> Yes (Provide title and description or content) <input type="checkbox"/> No

District 10 Transportation Planning Scoping Information Sheet

SEGMENT MAP



On State Route 120, in San Joaquin County, Between PM R0.9 and PM R1.8

Attachment H

Right of Way Conceptual Cost Estimate Component

Right of Way Cost Component

Address	3756 Yosemite Avenue	3870 Yosemite Avenue	3938 Yosemite Avenue
APN	241-400-06	241-400-05	241-400-04
Current Use	Industrial	Industrial	Industrial
Parcel size	1,999,404 SF	277,912 SF	347,608 SF
Required Acquisition	304,500 SF	23,450 SF	133,500 SF
Remainder	1,694,904 SF	254,462 SF	214,108 SF
Excess	n/a	n/a	n/a
Additional Costs – Utility Relocations, Clearance /Demolitions, etc.	\$120,000	\$240,000	n/a
Acquisition Estimate - Land Only \$/SF (Total)	\$11.50/SF (\$3,500,000)	\$18.00/SF (\$450,000)	\$18.00/SF (\$2,410,000)
Acquisition Estimate – Building \$/SF (Total)	n/a	n/a	n/a
Relocation	No	No	No
Cost to Cure	n/a	n/a	n/a
Notes	All Alts	Alt 2 & 3	Alt 2 & 3
Total Acquisition	\$3,620,000	\$690,000	\$2,410,000

Address	4052 Yosemite Avenue	1425 Madruga Road	1601 Madruga Road
APN	241-400-02	241-030-31	241-030-36
Current Use	Industrial	Industrial	Industrial
Parcel size	227,383 SF	52,272 SF	127,630 SF
Required Acquisition	25,000 SF	52,272 SF	15,000 SF
Remainder	202,383 SF	0 SF	112,630 SF
Excess	n/a	n/a	n/a
Additional Costs – Utility Relocations, Clearance /Demolitions, etc.	n/a	n/a	\$1,500,000
Acquisition Estimate - Land Only \$/SF (Total)	\$18.00/SF (\$460,000)	\$47.00/SF (\$2,500,000)	\$205.00/SF (\$3,080,000)
Acquisition Estimate – Building \$/SF (Total)	n/a	n/a	n/a
Relocation	No	No	No
Cost to Cure	n/a	n/a	n/a
Notes	Alt 2 & 3	Alt 3	Alt 3
Total Acquisition	\$460,000	\$2,500,000	\$4,580,000

Attachment I

Risk Register

Project Risk Register

DIST- EA 10-1G760						Project Name: SR120/Yosemite Ave Interchange Improvements			Project Manager: Aaron Silva			Date Created: 05/29/18		Last Updated: 11/19/18	
						Co - Rte - PM: SJ-120-PM 1.1/1.6			Telephone: (916) 381-9100						
ITEM	ID #	Status	Threat / Opportunity	Category	Date Risk Identified	Risk Description	Root Causes	Primary Objective	Overall Risk Rating	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	WBS Item	Status Date and Review Comments
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(k)	(l)	(m)	(n)	(p)	(q)
1	10-1G760-01	Active	Threat	PM	11/19/18	Project scope, schedule, objectives, cost, and deliverables are not clearly defined or understood.	Unclear expectations may result from misinterpretation of scope resulting in disputes concerning expectations of service or disputed concerning invoicing	TIME	Probability 1=Very Low (1-9%) Low Impact 4 =Med	City of Lathrop	Dissatisfaction with service expressed by City or payments to consultant team delayed or withheld.	MITIGATE	City and consultant team to proactively communicate expectations with respect of scope		
2	10-1G760-02	Active	Threat	PM	11/19/18	Estimating or scheduling errors	inaccurate assumptions for unit costs and/or working days	COST	Probability 2=Low (10-19%) Low Impact 2 =Low	City of Lathrop	Design changes trigger increased project costs	MITIGATE	Schedule to be reviewed at monthly PDT meetings and with the consultant Team and City		
3	10-1G760-03	Active	Threat	PM	11/19/18	Lack of coordination / communication	poor understanding of scope/deliverable by local agency	TIME	Probability 2=Low (10-19%) Low Impact 2 =Low	City of Lathrop	Dissatisfaction with service expressed by City	AVOID	Communicate early with project team on common understanding of the scope of the project.		
4	10-1G760-04	Active	Threat	PM	11/19/18	Design changes increase project costs	Design exceptions not approved for greater than 4% cross slope at intersection or for corner sight distance	COST	Probability 3=Med (20-39%) Med Impact 4 =Med	City of Lathrop	Design Exceptions are not approved	ACCEPT	Work with Caltrans to approve design exceptions		
5	10-1G760-05	Active	Threat	PM	11/19/18	Geotechnical information is currently inadequate to establish construction schedule	Unknown Soil conditions - Investigation needed to determine settlement periods for ramp construction	TIME	Probability 3=Med (20-39%) Low Impact 2 =Low	City of Lathrop	Geotechnical Investigation	MITIGATE	Communicate with owners of the potential time increase during construction.		
6	10-1G760-06	Active	Threat	ENV	11/19/18	Added workload or time requirements because of new direction, policy or statute	New State policies	SCOPE	Probability 3=Med (20-39%) Low Impact 2 =Low	City of Lathrop	Identification of new applicable policies	ACCEPT	Communicate early with key Agency members to effect a common understanding of the scope of the project.		
7	10-1G760-07	Active	Threat	EXT	11/19/18	Landowners unwilling to sell.	Money or business/ personal	TIME	Probability 2=Low (10-19%) Med Impact 4 =Med	City of Lathrop	Right of Way Negotiations	MITIGATE	Negotiations with property owners to start early enough to avoid delay in project.		

Project Risk Register

DIST- EA 10-1G760						Project Name: SR120/Yosemite Ave Interchange Improvements			Project Manager: Aaron Silva			Date Created: 05/29/18		Last Updated: 11/19/18	
						Co - Rte - PM: SJ-120-PM 1.1/1.6			Telephone: (916) 381-9100						
ITEM	ID #	Status	Threat / Opportunity	Category	Date Risk Identified	Risk Description	Root Causes	Primary Objective	Overall Risk Rating	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	WBS Item	Status Date and Review Comments
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(k)	(l)	(m)	(n)	(p)	(q)
8	10-1G760-08	Active	Threat	EXT	11/19/18	Delay of design decisions due to the future development projects	Unknown / changing project needs resulting from adjacent developments	TIME	Probability 2=Low (10-19%)	City of Lathrop	Public Workshop or City Council Decision	ACCEPT	Communicate early with key Agency members to effect a common understanding of the scope of the project.		
									Low						
									Impact 2 =Low						
9	10-1G760-09	Active	Threat	R/W	11/19/18	Unplanned Utility Relocations	Utilities in conflict with proposed transportation project	TIME	Probability 2=Low (10-19%)	City of Lathrop	Utility Coordination	AVOID	Pothole and coordinate with utility companies early and often in the design phase of the project to avoid delays.		
									Low						
									Impact 2 =Low						
10	10-1G760-10	Active	Threat	ENV	11/19/18	Delay in obtaining permit to enter for specialist study.	Property owner not allowing entry / permit approval for studies	TIME	Probability 3=Med (20-39%)	City of Lathrop	Coordinate with owners for PTE	ACCEPT	Communicate with owners of areas requiring PTE.		
									Low						
									Impact 2 =Low						
11	10-1G760-11	Active	Threat	ENV	11/19/18	Unanticipated hazardous waste results	ADL, Leaded paint, Asbestos, historical land use	TIME	Probability 3=Med (20-39%)	City of Lathrop	Hazardous Waste Studies	ACCEPT	Conduct environmental site assessments as needed to identify scope of environmental studies during PA&ED phase.		
									Low						
									Impact 2 =Low						
12	10-1G760-12	Active	Threat	CON	11/19/18	Possibility that excess soil cannot be used on site	Soil is either contaminated or unsuitable	COST	Probability 3=Med (20-39%)	City of Lathrop	Excess soils cannot be used within project	ACCEPT	Project construction costs assumed to increase due to increased import/export soils		
									Low						
									Impact 2 =Low						
13	10-1G760-13	Active	Threat	EXT	11/19/18	Possibility project encroaches into culturally sensitive location	Culturally sensitive area identified within project limits	TIME	Probability 2=Low (10-19%)	City of Lathrop	Culturally sensitive area within project limit	ACCEPT	Identify limits of culturally sensitive area, and coordinate with respective agency.		
									Low						
									Impact 2 =Low						
14	10-1G760-14	Active	Threat	ENV	11/19/18	Possible Species not previously identified	Referenced report from 2004 -- May not include current index of species.	TIME	Probability 2=Low (10-19%)	City of Lathrop	New species identified within project limits	AVOID	Additional evaluations/studies to be performed during PA&ED phase; Likely to identify species not previously identified.		
									Low						
									Impact 2 =Low						

Project Risk Register

DIST- EA 10-1G760					Project Name: SR120/Yosemite Ave Interchange Improvements				Project Manager: Aaron Silva				Date Created:	Last Updated:	
					Co - Rte - PM: SJ-120-PM 1.1/1.6				Telephone: (916) 381-9100				05/29/18	11/19/18	
ITEM	ID #	Status	Threat / Opportunity	Category	Date Risk Identified	Risk Description	Root Causes	Primary Objective	Overall Risk Rating	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	WBS Item	Status Date and Review Comments
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
15	10-1G760-15	Active	Threat	EXT	11/19/18	Possible need for Native American Consultation, if near historical tribal site	If project is existing within historical tribal site	TIME	Probability 2=Low (10-19%)	City of Lathrop	Historical Tribal Site within project limits	ACCEPT	Communicate/seek Native American Consultation to identify if project limits are near historical tribal site -- If so start communication process.		
									Low						
									Impact 2 =Low						
16	10-1G760-16	Active	Threat	ENV	11/19/18	Possibility birds, bats and raptors use existing structures as nesting/gathering areas	SR120 OC structures used by birds for nesting	TIME	Probability 2=Low (10-19%)	City of Lathrop	possibility that birds, bats, and raptors use existing structures as nesting/gathering areas	ACCEPT	During PA&ED phase, perform surveying to identify if birds, bats, or raptors use existing structures as nesting/gathering areas.		
									Low						
									Impact 4 =Med						
17	10-1G760-17	Active	Threat	ENV	11/19/18	Need for air quality report to be prepared.	Changes in traffic conditions may impact site air quality	TIME	Probability 2=Low (10-19%)	City of Lathrop	Need air quality report for permit	ACCEPT	During PA&ED phase, prepare air quality study/report		
									Low						
									Impact 2 =Low						
18	10-1G760-18	Active	Opportunity	DESIGN	11/29/18	Alternatives 2 and 3 may be revisited during future studies, and if deemed as viable, may be included as part of this project.	Addition evaluation or project conditions could lead to re-evaluating alternatives	QUALITY	Probability 3=Med (20-39%)	City of Lathrop	Addition evaluation or project conditions could lead to re-evaluating alternatives	ACCEPT	Prepare additional evaluation of alternative at a later time		
									Low						
									Impact 2 =Low						
19	10-1G760-19	Active	Threat	DESIGN	02/18/19	Increase in costs of materials	Market changes can impact construction costs	COST	Probability 3=Med (20-39%)	City of Lathrop	Market Trend	ACCEPT	During the phases of the project reevaluate the unit cost as design progresses		
									Low						
									Impact 4 =Med						
20	10-1G760-20	Active	Threat	PM	02/18/19	Preferred Alternative 1 may not be acceptable to stakeholders	Stakeholders do not support the project	TIME	Probability 2=Low (10-19%)	City of Lathrop	Stakeholder opposition to the project	MITIGATE	Communicate the project early with stakeholders		
									Low						
									Impact 8 =High						

Attachment J


Stormwater Data Report



Dist-County-Route: 10-SJ-120
Post Mile Limits: R0.9/R1.8
Project Type: Interchange Improvement
Project ID (EA): 1017000160 (10-1G760)
Program Identification: 20.XX.400.100
Phase: PID PA/ED PS&E

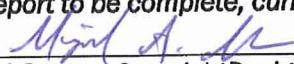
Regional Water Quality Control Board: Region 5, Central Valley, Sacramento Office
Total Disturbed Soil Area: **24.7 acres** PCTA: **0.0 acres (no discharge to waterbody)**
Alternative Compliance (acres): N/A ATA 2 (50% Rule)? Yes No
Estimated Const. Start Date: 06/2022 Est Const. Complete: 07/2024
Risk Level: RL 1 RL 2 RL 3 WPCP Other: _____
Is MWELo applicable? Yes No
Is the Project within a TMDL watershed? Yes No
TMDL Compliance Units (acres): To be determined
Notification of ADL reuse (if yes, provide date): Yes Date: _____ No

This Report has been prepared under my direction. I attest to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E only.

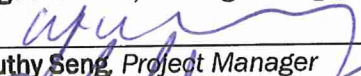


Aaron Silva, Registered Project Engineer 9/27/18 Date

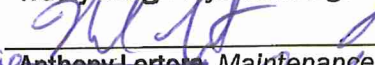
I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:



Miguel Gomez, Oversight Design SW Coordinator 12/17/18 Date



Wuthy Seng, Project Manager 12/17/18 Date

Manuel Asociacion 

Anthony Lertora, Maintenance Stormwater Coordinator 12-18-18 Date



Brad Cole, Landscape Architecture 12/17/18 Date

for 

James Espinosa, CR Env NPDES SW Branch Manager December 18, 2018 Date

1. Project Description

Crow Holdings Industrial (CHI), in cooperation with the City of Lathrop and Caltrans, have initiated this PSR-PDS to evaluate an interchange improvement alternative for the Guthmiller Road/Yosemite Avenue and State Route 120 (SR 120/Yosemite Ave) interchange. South Lathrop Specific Plan Final EIR forecasts this interchange improvement maintains an acceptable Level of Service (LOS) for the 20-year design life and the build-out of the South Lathrop Specific Plan.

The proposed alternative includes reconfiguring WB SR 120 ramps from L-1 tight diamond configuration to an L-7 loop ramp; installing traffic signals at the SR 120/Yosemite interchange to improve traffic movements; lane-widening SR 120 ramps, and widening Guthmiller Road to four 12-foot travel lanes with two 6-foot bike lanes and two 8-foot sidewalks. Reconfiguring the L-1 to an L-7 loop ramp will require widening the West Yosemite Avenue Undercrossing (Bridge No. 29-271 L/R), taking additional Right-of-Way from the NE corner of the interchange. Widening Guthmiller Road will require installation of earth retaining structures.

At the SR 120/Yosemite Ave interchange, DPP infiltration structures will be located within the physical gore area and between the Caltrans right-of-way and interchange ramps. The retention basins will receive runoff from Guthmiller Road and SR 120 ramps as both sheet and concentrated flows and will contain the runoff generated by two 10-year frequency storms of 24-hour durations. Retention basins will be interconnected across interchange ramps. Flared end sections and outlet protection will be used where localized scouring is anticipated from concentrated flows. Retention basins will contain a max water depth of 3 feet, footprints ranging up to 0.8 acres, and side slopes varying from 2:1 to 4:1 depending upon right-of-way availability. To limit erosion the project area will revegetate preconstruction levels, and where necessary, slopes will be stabilized using permanent erosion control measures. The proposed basin design will provide adequate space for maintenance and vector control access.

Site and surface conditions considered when preparing this Stormwater Data Report are presented within the SR 120/Yosemite Ave Interchange Improvement Projects PSR-PDS. We prepared the following Project Surface Categories Table per Section Four of the Caltrans Stormwater Quality Handbook Project Planning and Design Guide, July 2017 (PPDG).

The Disturbed Soil Area (DSA) for the project is 24.7 acres. DSA is the area where subgrade soil is exposed and is estimated by quantifying areas where pavement is being removed and replaced, new pavement is being installed, and 10ft offset from fill catch points.

The Total Post Project Impervious Area (TPPIA) for the project is 17.3 acres. TPPIA is estimated by measuring the impervious surfaces after project completion.

The Initial Impervious Area (IIA) for the project is 12.9 acres. IIA is estimated by measuring the impervious surfaces before project completion.

The Impervious Area Added for the project is 5.7 acres. Impervious area added is estimated by measuring areas that became impervious after project completion.

The Impervious Area Removed for the project is 1.3 acres. Impervious area removed is estimated by measuring the impervious area removed, and not replaced by the construction of this project.

The Excluded Impervious Area for the project is 0.5 acres. Excluded impervious area is estimated by measuring the areas for sidewalks, pedestrian ramps, and bike lanes. This area is used to reduce the Net New Impervious Area per table 4-1 of the Caltrans Stormwater Quality Handbook, Project Planning and Design Guide (July 2017).

The Net New Impervious Area (NNIA) for the project is 3.7 acres. NNIA is estimated by measuring the impervious area added to the project (5.0 acres) then discounting for impervious surfaces removed (1.3 acres) and Excluded Impervious Area (0.5 acres).

The Replaced Impervious Area (RIS) for the project is 0.1 acres. RIS is estimated by measuring the impervious area removed and replaced during construction which also exposed underlying soils/pervious subgrade.

The New Impervious Surface (NIS) for the project is 4.0 acres. NIS is calculated by adding both the NNIA and RIS.

Additional Treatment Area Type 1 (ATA #1) for the project is 0 acres. ATA #1 is not required because no existing treatment BMPs are being removed.

Additional Treatment Area Type 2 (ATA #2) for the project is 0 acres. ATA #2 is not required because NNI is less than 50% of the TPPIA.

Post Construction Treatment Area (PCTA) for the project is 0 acres. Stormwater will be retained in Caltrans R/W and will not directly or indirectly discharge in to waters of the united states.

PCTA Calculations		
CALCULATION AREA TYPES		ACRES
Total Disturbed Soil Area	(DSA)	24.7 Acres
Total Post Project Impervious Area	(TPPIA)	17.3 Acres
Pre-Project Impervious Area	(IIA)	12.9 Acres
Impervious Area Added		5.7 Acres
Impervious Area Removed		1.3 Acres
Excluded Impervious Area		0.5 Acres
Net New Impervious Area	(NNIA)	3.9 Acres
NNI to TPPIA (Percentage)		19%
Replaced Impervious Surface	(RIS)	0.1 Acres
New Impervious Surface	(NIS)	4.0 Acres
Additional Treatment Area Type 1	(ATA #1)	0.0 Acres
Additional Treatment Area Type 2	(ATA #2)	0.0 Acres
Post Construction Treatment Area	(PCTA)	0.0 Acres

Compliance with Federal NPDES and State Water Code

This project will be compliant with the following federal NPDES and State Water codes:

[State of California Water Code Porter-Cologne 13260 \(Reports of Waste Discharge to Land\) Compliance](#)

Section 13260 of the State of California's Porter-Cologne Water Quality Control Act (Water Code) requires that a person proposing to discharge waste must first file with the Regional Water Board a report of the discharge. This project will be in compliance with 13260 either as covered by the Caltrans Statewide MS4, which is already in effect, or by the CGP, with the SMARTS data base being the equivalent process of the Section 13260 Report of Waste Discharge.

[State of California Water Code Porter-Cologne 13376 \(Reports of Discharge to Navigable Waters\) Compliance](#)

Chapter 5.5 of the Water Code implements the Federal Clean Water Act. Section 13376 of the Water Code requires notification to the State Water Board in compliance with the procedures set forth in Water Code Section 13260.

[Limitations on Use of Asphalt Pavement Grindings, Chunks and Pieces, DFW MOU](#)

By a memo dated In 1993, the Caltrans Headquarters Construction Chief informed all District Directors of the Memorandum of Understanding between Caltrans and the Department of Fish and Game (now Wildlife) describing the conditions where use of asphaltic materials would not conflict with the Fish and Game Code. That document, along with other guidance, is referenced in Highway Design Manual Section Section 110.11(3) HDM. Placement of asphalt pavement grindings (from cold planing, for instance), chunks and or pieces where they can enter waters of the State can be viewed as violating the Fish and Wildlife Code, the State's water pollution prevention laws and Caltrans Policy and Standards. This project does not involve the use of asphalt grindings, chunks or pieces.

2. Site Data and Stormwater Quality Design Issues

The project is located within Region 5, Central Valley Regional Water Quality Control Board (RWQCB) jurisdiction. The following section presents site data specific to stormwater quality design.

[Surface Hydrology](#)

The Lathrop Quadrangle, revised 1994, includes an unnamed intermittent stream extend North-South and crossing SR 120 on the eastern project limits. The intermittent stream is not visible during review of aerial photography.

[Receiving Water Bodies](#)

The proposed Caltrans R/W watershed measures 27.12 acres. The watershed occurring within Caltrans R/W is retained and does not directly or indirectly connect with navigable water ways or water bodies with 303(d) or TMDL regulations. This project is in the San Joaquin Delta, where Caltrans is named a stakeholder in the MethylMercury TMDL through Attachment IV of the Caltrans Statewide MS4. This project does not discharge to waterbodies. This project is not located in an Area of Special Biological Significance (ASBS).

404 Permit and 401 Certification

Project activities may necessitate obtaining a 404 permit from the Army Corps of Engineers, and there could be the subsequent need to obtain 401 Certification from the Regional Water Quality Control Board.

Climate

The National Weather Service cooperative weather station at the Stockton Weather service office (WSO) Airport is located approximately 8 miles north of the project site at approximately 20 feet above the mean sea level. The mean Annual Temperature at the Stockton WSO Airport is 61.53 °F. Mean annual precipitation is 13.83 inches, with most falling as rain between November and April. Between August 1, 2005, and July 31, 2006 total measured precipitation at the Stockton WSO Airport weather station was 16.67 inches. Most of the precipitation measured during this rainfall period fell during December, January, March, and April.

Topography and Site Geology

SR-120/Yosemite Interchange project is located within the San Joaquin Valley sub-area of the Great Valley Geomorphic Province. This area is bound by Sierra Nevada to the east, the Coast Ranges to the west, the Mojave Desert and Transverse Ranges to the south, and the Klamath Mountains to the North. The Great Valley is a broad, elongated, structural trough that has been filled with a thick sequence of sediments and marine deposits.

Project site is generally underlain by the following Quaternary Geologic Units:

Qdp – Dos Palos alluvium (Holocene)

Qm – Modesto Formations (Late Pleistocene)

Site topography is generally flat along the SR-120 alignment. The existing SR-120/Yosemite approach fill side slopes are approximately 2:1 or flatter. North and south of SR-120 exists shallow DPP infiltration structures. All drainage for SR-120 and the SR-120/Yosemite Ave undercrossing is directed towards these DPP infiltration structures.

Soil Characteristics

Geologists with the State of California Department of Transportation recorded Log of Test Borings which are dated Jan 1981 and included within the SR-120/Yosemite As-Builts. Generally, the geologists encountered sands and sandy silts to a depth of at least 75.0 feet below ground surface (BGS). At greater than 15.0 feet BGS, geologists encountered 5.0 to 10.0 foot-thick layers of stiff cohesive soils interbedded within sand. The apparent density of sands ranged from loose to very dense and typically increased in apparent density with depth.

The United State Department of Agriculture (USDA) Natural Resources Conservations Service (NRCS) web soil survey classified near surface soils within the proposed DPP infiltration basins as Hydrologic Soil Group (HSG) A. The web soil survey identified near surface soils permeability's up to 20.0 inches per hour.

Groundwater Information

The project site is located near the south-eastern extent of the Eastern San Joaquin Groundwater Basin. The 2004 Eastern San Joaquin Groundwater Basin Groundwater Management Plan

indicated the depth to groundwater as approximately 15 feet and projects that the depth to groundwater will increase with time.

Geologists with the State of California Department of Transportation recorded groundwater elevations encountered during their July/August 1972 investigations. The average depth to groundwater was 11.1 feet and ranged from 5.0 to 12.9 feet below ground surface. The following table contains the groundwater field data recorded during this investigation.

SR-120/Yosemite Ave Groundwater Conditions		
Boring ID	Depth to Groundwater (in Feet)	Date
B-1	12.9	7/26/1972
B-3	12.4	7/26/1972
B-5	12.4	7/27/1972
B-6	5.0	7/28/1972
B-7	12.0	8/8/1972
B-8	12.0	8/1/1972
Average Depth	11.1	—

On June 6, 2017, we reviewed the State Department of Water Resources Water Data Library which identified two historical irrigation wells within 5000 feet of the SR-120 / Yosemite Avenue Interchange, Station 377837N1212816W001 and 377916N1212719W001. Data recorded within the past 25-years indicates that the depth to groundwater varied from 5.2 to 17.1 feet below ground surface.

Hazardous Waste

On June 6, 2017, we reviewed the State Water Boards GeoTracker and EnviroStor database which did not report registered contaminated sites within 5000 feet of the SR-120 / Yosemite Avenue Interchange.

Erosion Potential

The project’s Erosion Potential is a function of it Erodibility Factor (K), which quantifies the erodibility of soil types; the Slope Length and Steepness Factor (LS), which quantifies the erodibility of slopes using site topography; and the Rainfall-Runoff Erosivity Factor (R), which quantifies erodibility using the EPA rainfall erosion index. We identify and list the project erosion potential factors below:

- $K_{avg} = 0.10$ (USDA NRCS Web Soil Survey)
- $LS_{avg} = 0.14$ (California Department of Transportation Online Water Quality Planning Tool)
- $R = 40.03$ (EPA Rainfall Erosivity Calculator)

Risk Assessment

The project’s overall Risk Level (RL) is determined by quantifying and comparing the Project Erosion Risk and the Receiving Water Risk. The project’s overall RL is used when preparing the Construction General Permit (CGP) and can vary from level 1 (lowest risk) to level 3 (highest risk).

The Project Erosion Risk levels include low, medium and high. The Project Receiving Water Sediment Risk level can be low or high.

We determined the following Project Risk Levels using the Caltrans Risk Level Analysis Tool:

- Project Erosion Risk: Low Project Sediment Risk (<15 tons/acre)
- Receiving Water Sediment Risk: Low Project Receiving Water Risk
- Combined Project Risk Level: Level 1

Measures for Avoiding or Reducing Potential Storm Water Impacts

The project team will coordinate with Caltrans Maintenance to identify historic slope failures within the project corridor and to determine the necessary mitigation measures.

The project slopes will generally be graded to 4:1 or flatter. When restricted by available right-of-way, slopes will be graded at 2:1 or flatter. The project team plans to coordinate with the district landscape architect for project erosion control strategy and plans.

Land Use

Local land use outside the SR-120/Yosemite Avenue interchange project is currently identified as agricultural and industrial. The South Lathrop Specific Plan proposes to develop neighboring land with commercial offices, limited industrial facilities, public facilities and park/open spaces.

Right-of-Way Requirements

The project will require Caltrans right-of-way acquisitions in the northern portion of the SR-120/Yosemite Avenue Interchange for the L-7 loop ramp configuration.

3. Construction Site BMPs

Construction BMPs should be enacted prior to start of construction, or as early as feasibly possible during construction. Whenever possible, earth-disturbing construction activities should not be scheduled during anticipated rain events. The design of all construction BMPs should comply with the design requirements found in the Caltrans Storm Water Quality Handbooks: Project Planning and Design Guide and Construction Site Best Management Practices Manual.

Funding is included in the project cost estimate for temporary Construction Site Management Best Management Practices, including, for instance:

Construction General Permit NPDES

This Project is anticipated to require coverage under Construction General NPDES Permit Number CAS000002 (CGP) as this project's DSA is in excess of the 1 acre threshold.

Stormwater Pollution Prevention Plan

This project is anticipated to require a CGP Stormwater Pollution Prevention Plan (SWPPP) for submittal to the Caltrans Resident Engineer for review and acceptance, as the projects DSA is in excess of the 1 acre threshold.

Soil Stabilization Measures

The following minimum soil stabilizing measures are anticipated for this project:

- Move-in/Move-out (Erosion Control)
- Temporary Hydraulic Mulch
- Temporary Cover

Multiple Move-in/move-out, temporary erosion control, and construction site measures are assumed throughout the project. Temporary Hydraulic Mulch should be placed on any exposed disturbed soils, stockpiles of soils and unprotected slopes that may be susceptible to erosion from either runoff or wind. Temporary Cover should be used to protect DSAs from erosion.

Sediment Control Measures

Temporary Fiber Rolls are anticipated as sediment control measures to minimize both sediment-laden sheet flows and concentrated flows from discharging the project limits.

Tracking Control Measures

To prevent the tracking of mud and dirt off-site stabilized construction entrances/exits are anticipated within the project area. Street sweeping may also be implemented to remove tracked sediment.

Waste Management and Materials Pollution Control Measures

Temporary Concrete washout bin is anticipated for project waste management and materials pollution control.

Job Site Management Measures

This project's Construction Site Management may also include:

- Proper temporary construction BMP selection, installation and maintenance
- Equipment storage
- Staging areas
- Paving and grinding operations
- Materials handling
- Additional Water Pollution Control
- Annual Construction General Permit Fee
- Maintenance Sharing

Contract items related to Section 401 Water Quality Certification not expected to be needed

The following items are not anticipated as required items for the Section 401 to be issued.

- Water Quality Annual Report
- Water Quality Monitoring Report
- Water Quality Sampling and Analysis Day

4. Maintenance BMPs

We will coordinate with Caltrans Maintenance Area Manager in selecting Maintenance BMPs including:

- Anti-litter signs,
- Maintenance Vehicle Pullouts, and
- Maintenance Worker Safety Features

Vector Control

To minimize mosquito production pursuant to Caltrans NPDES No. CAS000003 this project will be designed to drain captured stormwater within 96-hours of the end of a rain event.

5. Other Water Quality Requirements and Agreements

Project activities may necessitate Section 404 Permit obtained from the Army Corps of Engineers, which will be conditioned upon being issued a Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board. However, the 401 is expected to not include any monitoring of a waterbody.

6. Permanent BMPs

Caltrans Statewide MS4 Post Construction Treatment Requirements

Projects that create 1 acre or more of NIS are subject to 'Post-Construction Treatment control' requirements of Caltrans' Statewide MS4 NPDES Permit Number CAS000003, viewable on page 38. From the Caltrans Project Planning and Design Guide, the PCTA is the sum of the NNIA and RIS and the additionally treated areas.

For some projects, such as this one, all of the highway stormwater runoff flows into longitudinal basins or retention basins within the Caltrans 'right-of-way' with no direct or indirect discharge to surface waters. Therefore, the PCTA – even for projects of NIS exceeding 1.0 acre – is 0.0 acres. Therefore, there is no requirement to consider providing permanent treatment of highway stormwater runoff, pursuant to the attached Evaluation Documentation Form. For general information purposes, for this project, the NNIA is estimated to be 3.9 acres, and the RIS is approximated at 0.1 acres.

Caltrans Statewide MS4 NPDES Rapid Assessment of Channel Stability at Highway Crossing

Caltrans' Statewide MS4 Permit states that Caltrans "shall ensure that all new development and redevelopment projects do not cause a decrease in lateral (bank) and vertical (channel bed) stability in receiving stream channels." Projects that create over 1.0 acres of NIS must deploy a threshold based analysis determining what measures are to be taken to prevent decreases in channel stability. If instabilities are revealed, the project could be required to consider different designs. This project does not discharge to a waterbody, nor does a waterbody cross under it within the limits of the project. Therefore, the project is not required to a Rapid Assessment of Channel Stability.

Design Pollution Prevention (DPP) BMP Strategy

The location is flat and not has no nearby waterbodies. The Design Pollution Prevention Strategy does not necessitate a detailed discussion.

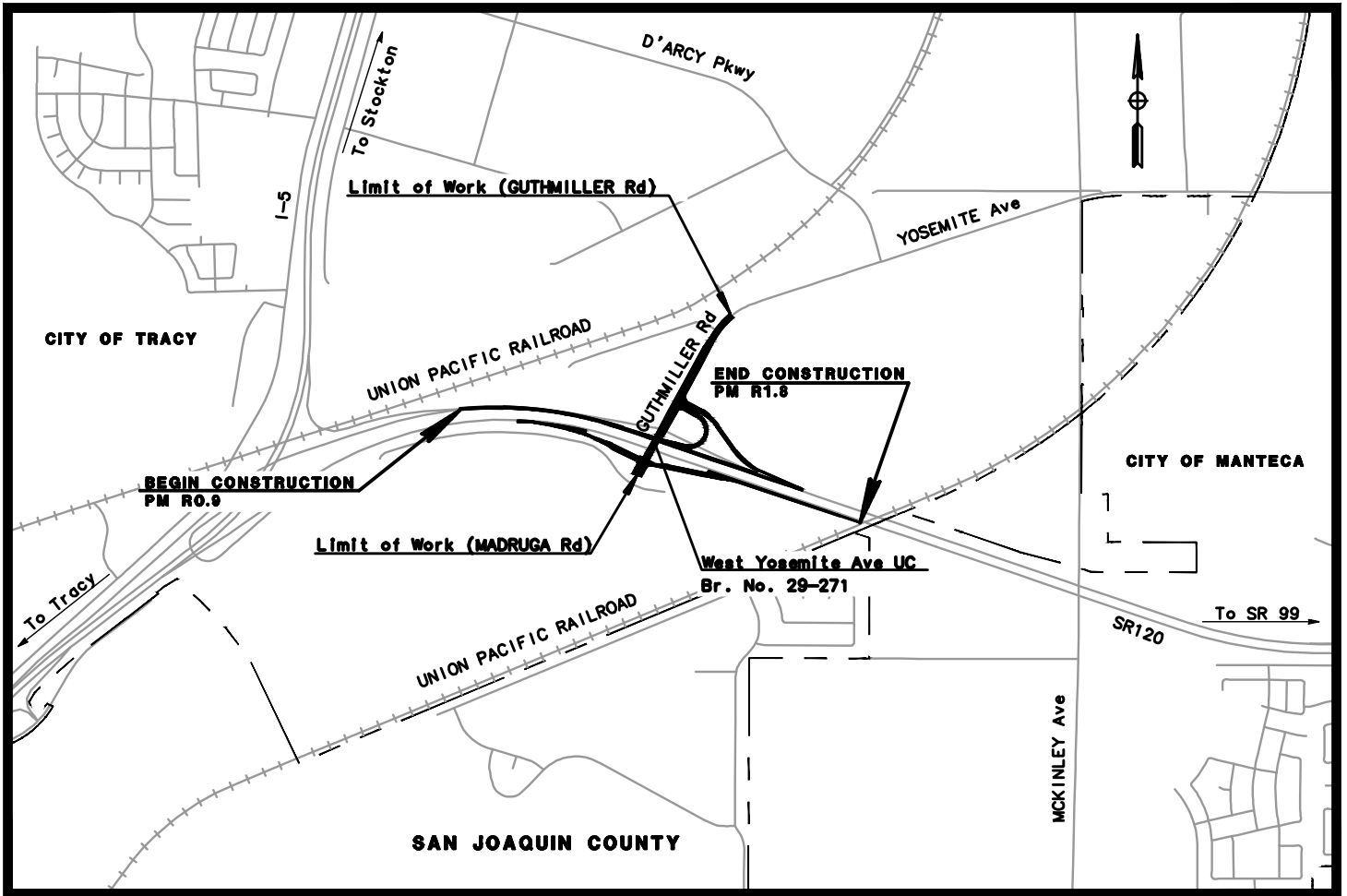
Treatment BMP Strategy

There are no permanent treatment BMPs needed of this project.

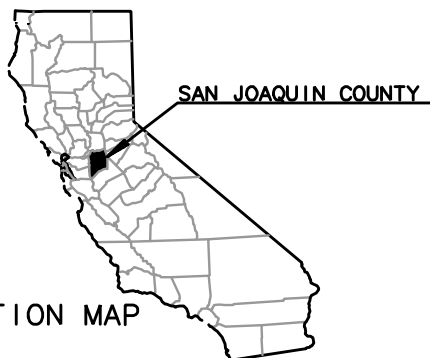
SWDR Attachments

- A. Vicinity Map
- B. Layout
- C. Evaluation Documentation Form (EDF)
- D. Risk Level Determination Documentation
- E. SWDR Summary Spreadsheet

A. Vicinity Map



**CROW HOLDINGS INDUSTRIAL - SR120/YOSEMITE AVE
VICINITY MAP**



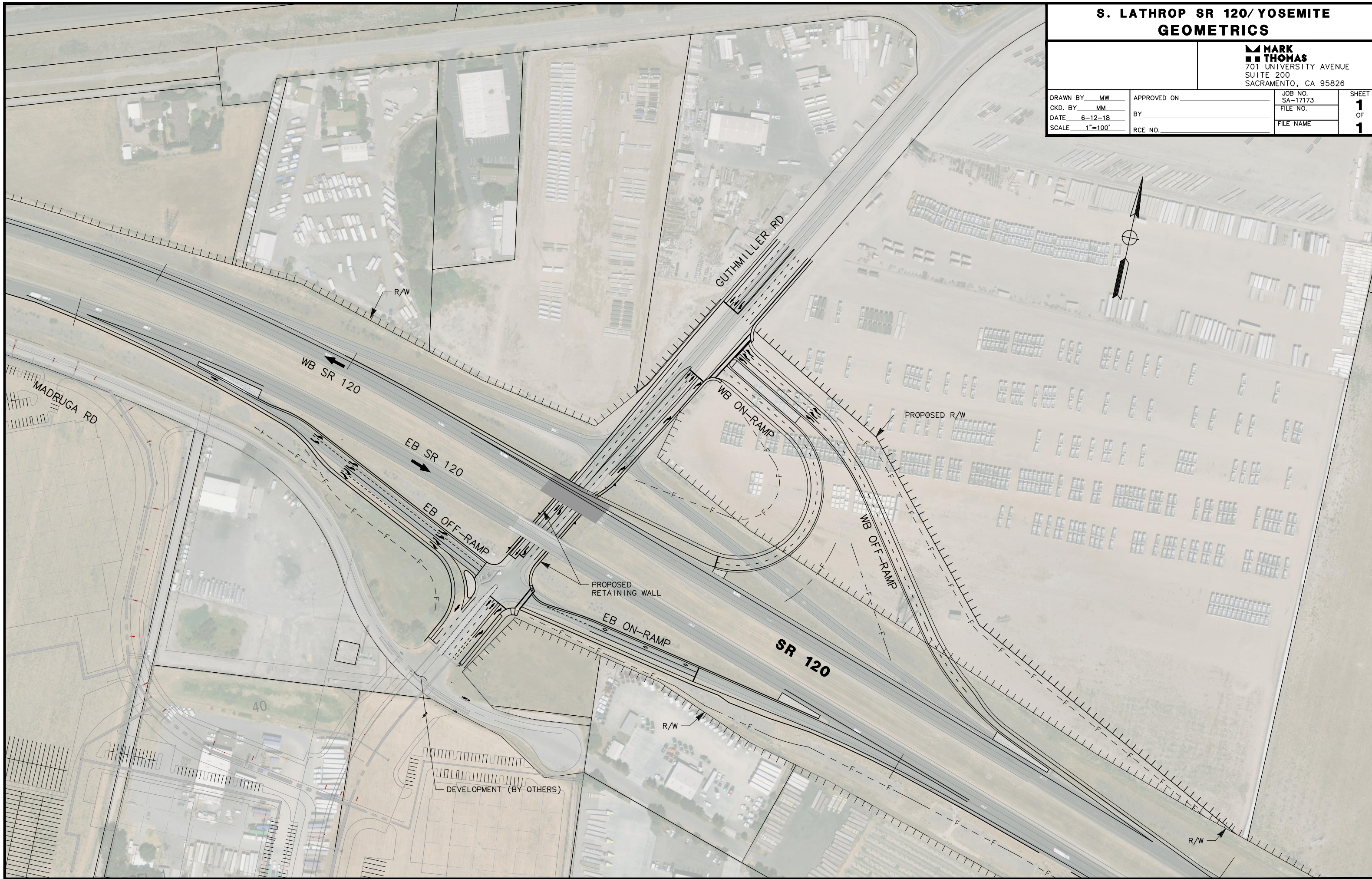
LOCATION MAP

B. Layout

S. LATHROP SR 120/YOSEMITE GEOMETRICS

MARK THOMAS
701 UNIVERSITY AVENUE
SUITE 200
SACRAMENTO, CA 95826

DRAWN BY MW	APPROVED ON _____	JOB NO. SA-17173	SHEET 1 OF 1
CKD. BY MM	BY _____	FILE NO.	
DATE 6-12-18	RCE NO.	FILE NAME	



40

DEVELOPMENT (BY OTHERS)

R/W

R/W

C. Evaluation Documentation Form (EDF)

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation
1.	Begin Project evaluation regarding requirement for implementation of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Treatment BMPs. Continue to 2.
2.	Is the scope of the Project to install Treatment BMPs (e.g., Alternative Compliance or TMDL Compliance Units)?		✓	If Yes , go to 8. If No , continue to 3.
3.	Is there a direct or indirect discharge to surface waters?		✓	If Yes , continue to 4. If No , go to 9.
4.	As defined in the WQAR or ED, does the project: a. discharge to areas of Special Biological Significance (ASBS), or b. discharge to a TMDL watershed where Caltrans is named stakeholder, or c. have other pollution control requirements for surface waters within the project limits?		✓	If Yes to any , contact the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to discuss the Department's obligations, go to 8 or 5. _____ (Design Stormwater Coordinator initials) If No to all , continue to 5.
		✓		
			✓	
5.	Are any existing Treatment BMPs partially or completely removed? (ATA condition #1, Section 4.4.1)		✓	If Yes , go to 8 AND continue to 6. If No , continue to 6.
6.	Is this a Routine Maintenance Project?		✓	If Yes , go to 9. If No , continue to 7.
7.	Does the project result in an increase of <u>one acre or more</u> of new impervious surface (NIS)?	✓*		If Yes , go to 8. If No , go to 9.
8.	Project is required to implement Treatment BMPs.	Complete Checklist T-1, Part 1. * No Treatment is required because stormwater does not directly or indirectly discharge to WOTUS. Go to 9.		
9.	Project is not required to implement Treatment BMPs. _____ (Design Stormwater Coord. Initials) <u>AE</u> (Project Engineer Initials) <u>9/27/18</u> (Date)	Document for Project Files by completing this form and attaching it to the SWDR.		

D. Risk Level Determination Documentation

	A	B	C
1	Sediment Risk Factor Worksheet		Entry
2	A) R Factor		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm		
5	R Factor Value		40.03
6	B) K Factor (weighted average, by area, for all site soils)		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	Site-specific K factor guidance		
9	K Factor Value		0.1
10	C) LS Factor (weighted average, by area, for all slopes)		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13	LS Factor Value		0.14
14			
15	Watershed Erosion Estimate (=R_xK_xLS) in tons/acre		0.56042
16	Site Sediment Risk Factor		Low
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		
19	High Sediment Risk: >= 75 tons/acre		
20			

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	yes/no	
A.1. Does the disturbed area discharge (either directly or indirectly) to a 303(d)-listed waterbody impaired by sediment (For help with impaired waterbodies please visit the link below) or has a USEPA approved TMDL implementation plan for sediment ? http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml	no	Low
OR		
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan)		
http://www.waterboards.ca.gov/waterboards_map.shtml		
Region 1 Basin Plan Region 2 Basin Plan Region 3 Basin Plan Region 4 Basin Plan Region 5 Basin Plan Region 6 Basin Plan Region 7 Basin Plan Region 8 Basin Plan Region 9 Basin Plan		

Combined Risk Level Matrix

		<u>Sediment Risk</u>		
		Low	Medium	High
<u>Receiving Water Risk</u>	Low	Level 1	Level 2	
	High	Level 2		Level 3



Project Sediment Risk: **Low**

Project RW Risk: **Low**

Project Combined Risk: **Level 1**

E. SWDR Summary Spreadsheet

SWDR Signed Date	District	EA/Project ID	County	Route	Beg_PM	End_PM	Project Description	Project Phase	Long SWDR	Risk Level	DSA (ac)	TMDL Waterbody	Biofiltration Strips and Swales	Detention	Infiltration Devices	GSRD	TST	MedFilter	DPPIA	SA	Other BMP	Est. Const_Start	Est. Const_Comp	SW Comment	Post Const Treatment Area (ac)
	10	EA 10-1G760/1017000160	SJ	120	0.9	1.8	SR-120/Yosemite Ave Interchange Improvements	PID	Yes	RL1	24.7	YES, SJ Delta Watershed	0	0	0	0	0	0	0	0		6/01/2023	07/01/2024	All SW on Caltrans R/W will be retained on Caltrans R/W	0

Project EA Number	10-1G760				
Project with a pre-July 1, 2013 approval date	No				
Regional Board	RB 5 Central Valley				
Project ID	1017000160				
Project Description	Interchange Improvement				
Project Phase	PID				
Non-Highway Facility	No				
SWDR Long Form?	Yes				
BMP Retrofit	No				
Project does not directly or indirectly discharge to surface waters	Yes				
District	10				
Post Mile	Type	County	Route	Dir	PM
	BPM	SJ	120		R0.9
	EPM	SJ	120		R1.8
Disturbed Soil Area (DSA acres)	24.7				
Risk Level	RL 1				
Does this project include Dredge and Fill Activities?	N/A				
PCTA (acres) from SWDR	0				
MWEL0	No				
Exemption Memo	No				
Registered Project Engineer / Landscape Architect	Aaron Silva				
Estimated Construction Date	6/1/2022				
Estimated Construction Completion Date	7/1/2024				
SWDR Approval Date of Final Designee PID	12/18/2018	 10-1G760K SWDR SWPPP 2018 12-18.pdf	Ethan Heilman		
	12/18/2018				
Last Edited	Ethan Heilman 12/18/2018 9:39:41 AM				
90% Walkthrough and other Document Upload					
Post Construction Treatment Area	0				

Post Construction Treatment Balance: 0

Compliance Units: 0.0

0 BMPs

There are no Approved Treatment BMPs/Source Control Devices for this project.

1. CU Factor is a contribution ratio calculated based on the individual BMP's treatment area relative to the project's overall treatment areas. This provides the method to track and distribute the TMDL CUs per BMPs within a project when the project exceeds MS4 permit's treatment requirement.

2. Tentative CU is the potential TMDL CU a particular project can generate. The displayed CU is tentative because the project condition may change until the construction has been completed. TMDL Status Review Report will identify and claim certain project's TMDL CU (Due Oct.1st annually).

Attachment K

Transportation Management Plan Checklist

D-10 TRANSPORTATION MANAGEMENT PLAN CHECKLIST

District - Project No: 10 1700 0160 EA: 1G760
 Date Prepared: September 5, 2018
 Prepared By: Ed B Pausanos
 Requested By: Ramin Kalantari/Aaron Silva

Co.-Rte.-P.M. SJ-120-R0.9/R1.80
 Location: Route 120/Yosemite Interchange in Lathrop

Stage of Project (X box) PID PSR PR PS&E **XX%** Description: Interchange Improvement

Date Signed
Date Signed
Date Signed
Date Signed

REQUIRED	RECOMMENDED	NOT APPLICABLE	BEES Item No.	COMMENTS	ITEM COST	REQUIRED IN SPEC.
----------	-------------	----------------	---------------	----------	-----------	-------------------

1.0 Public Information Strategies

- 1.1 Brochures and Mailers
- 1.2 Media Releases (& minority media sources)
- 1.3 Paid Advertising
- 1.4 Public Information Center
- 1.5 Public Meetings/Speakers Bureau
- 1.6 Project Telephone Hotline
- 1.7 Internet, E-Mail
- 1.8 Local cable TV and News
- 1.9 Notification to Impacted groups
(i.e. bicycle users, pedestrians with disabilities, others)
- 1.10 Project Web Page
- 1.11 Caltrans Public Information Office
- 1.12 Consultant Public Information Office
- 1.13 Other items

		X				
X						
		X				
	X			See comments below.		
	X			Designer to add to budget if public meeting is added.		
		X				
		X				
	X					
X				Designer to verify impacted groups.		
		X				
X				Items 1.1 to 1.11 to be handled by CT PIO.	\$10K	X
		X				
		X				

2.0 Traveler Information Strategies

- 2.1 Changeable Message Signs (permanent)
- 2.2 Changeable Message Signs (portable)
- 2.3 Special Construction Signs
- 2.4 Traveler Information Systems (CHIN/Internet)
- 2.5 Highway Advisory Radio "HAR" (fixed or mobile)
- 2.6 Radar Speed Sign
- 2.7 Traffic Management Team
- 2.8 Revised Transit Schedules/ Maps
- 2.9 Bicycle community information
- 2.10 Other items

	X			Utilize existing units when available.		
X				See comments below	\$90K	X
	X				\$10K	X
X				As required.		X
		X				
		X				
		X				
		X				
X				Same as Item 1.9.		
		X				

3.0 Incident Management

- 3.1 COZEEP
- 3.2 Freeway Service Patrol (tow truck service patrol)
- 3.3 Transportation Management Center
- 3.4 Traffic Control Inspector (Caltrans)
- 3.5 Traffic Management Team
- 3.6 On-site Traffic Advisor (contractor)
- 3.7 Other Items

X				See comments below	\$192K	X
		X				
X						
	X					
	X			As needed.		
	X					
		X				

4.0 Construction Strategies

- 4.1 Delay damage clause
- 4.2 Night work
- 4.3 Weekend Work
- 4.4 Extended Weekend Closures
- 4.5 Planned Lane Closures
- 4.6 Planned Ramp Closures
- 4.7 Total Facility Closure/Long-term closure of ramps
- 4.8 Project Phasing
- 4.9 Truck Traffic Restrictions
- 4.10 Reduced Lane Widths
- 4.11 Temporary K-Rail
- 4.12 Temporary Traffic Screens
- 4.13 Regulatory Temporary Traffic Control Speed Zone
- 4.14 Traffic Control Improvements

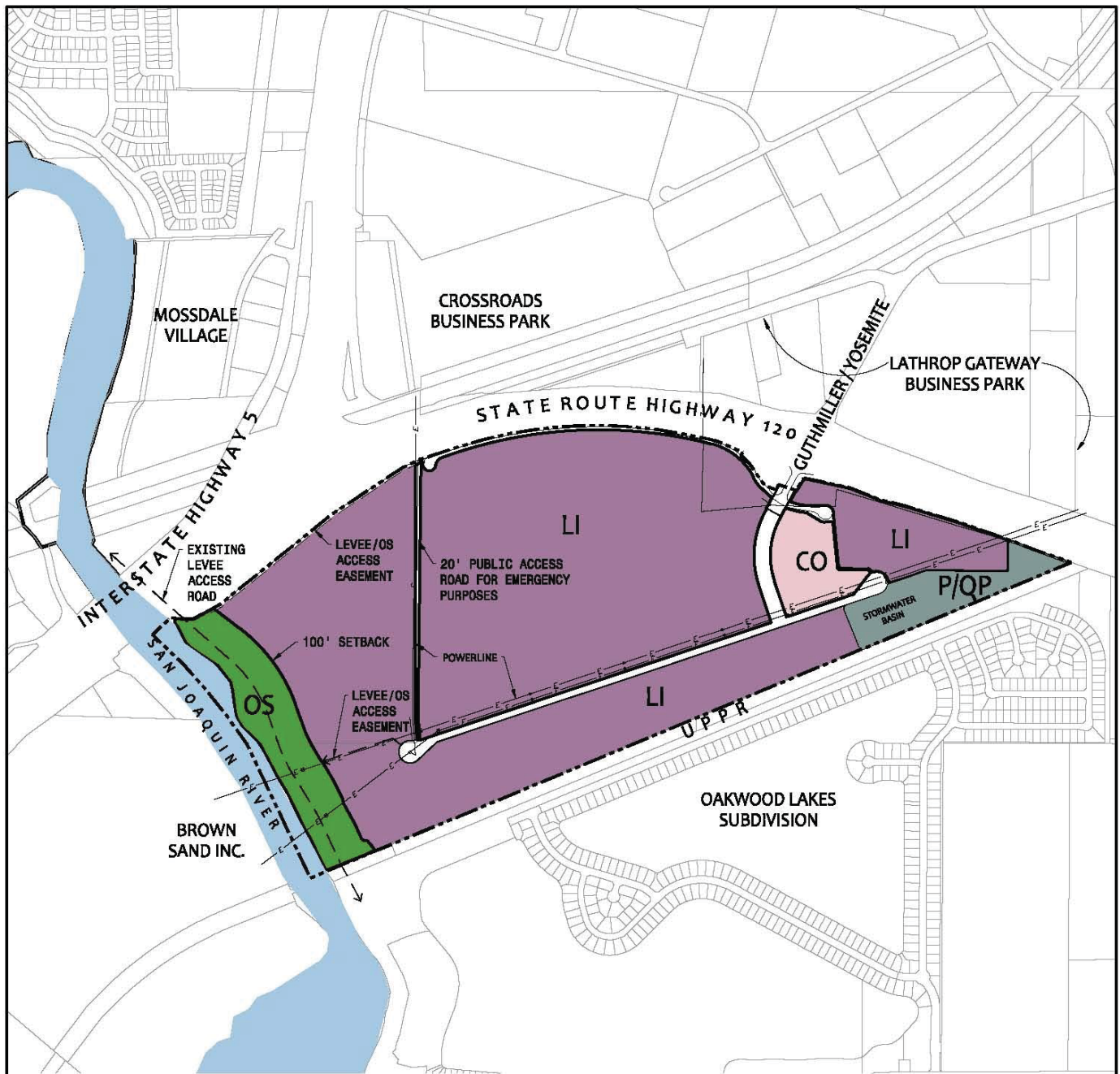
		X				
X				Per Lane Closure Charts		X
		X				
		X				
X				Per Lane Closure Charts.		X
X				Per Lane Closure Charts.		X
X				Per Lane Closure Charts.		X
	X			As per stage construction		
		X				
		X				
X				As per stage construction		X
		X				
		X		No request submitted		
X				As necessary.		

Attachment L

SHOPP Performance Measures

Attachment M

**South Lathrop Specific Plan (SLSP)
(Exhibit)**

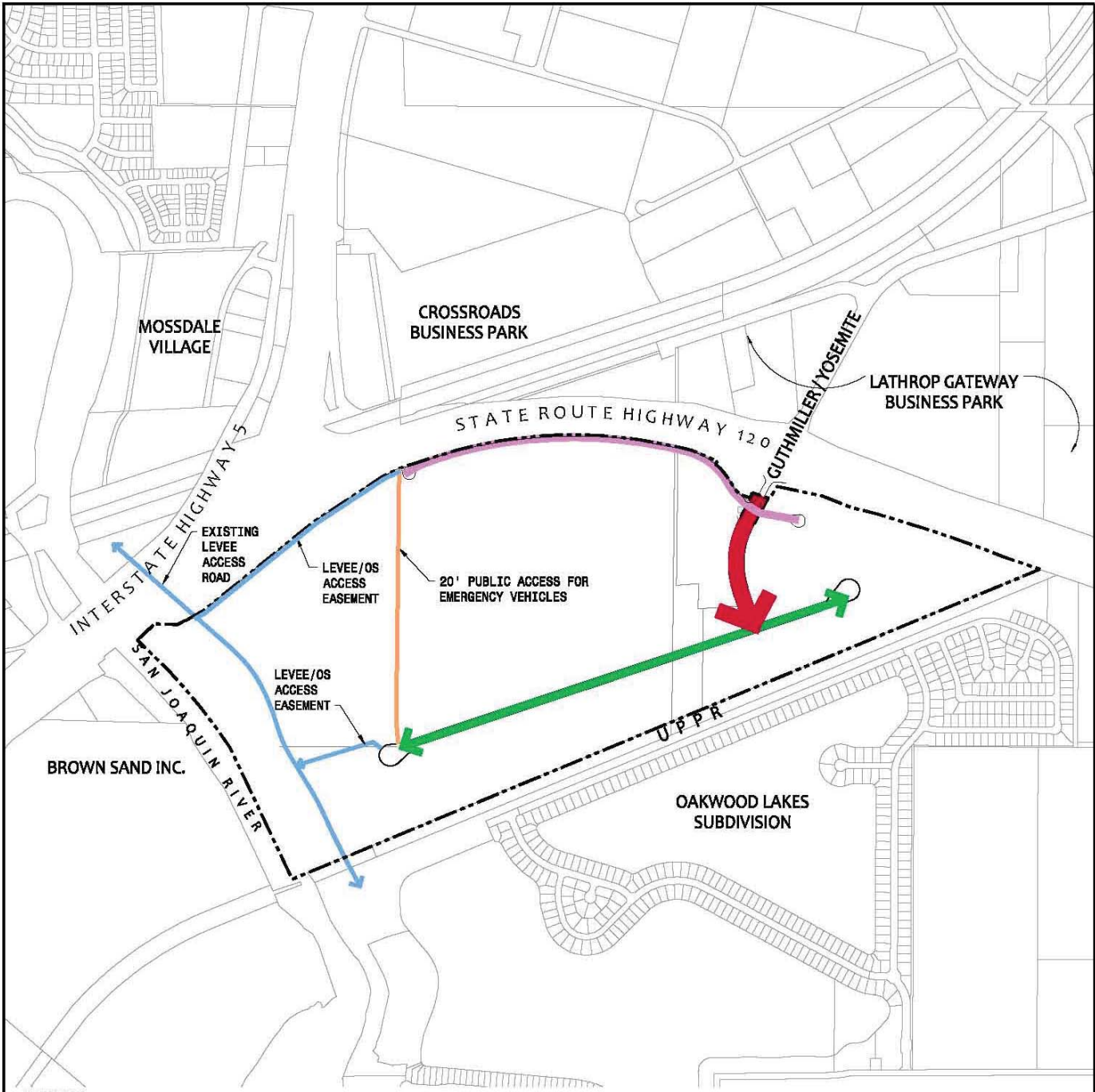


- LEGEND**
- Limited Industrial
 - Commercial Office
 - Open Space:
 - River/Levee Park
 - River
 - Public/ Quasi Public Facilities (Storm Water Basins, Wetlands)
 - Project Boundary
 - Levee Access Road/Trail
 - Existing Electrical Lines



MACKAY & SOMPS
 ENGINEERS PLANNERS SURVEYORS

LAND USE PLAN
 South Lathrop Specific Plan
 Lathrop, Ca



LEGEND

- 4 - Lane Arterial
- Local Industrial Street
- Existing Madrugal Road
- Public Access Road for Emergency Purposes
- Levee Access Road
- Project Boundary



NORTH
N.T.S.

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS

VEHICULAR CIRCULATION

South Lathrop Specific Plan

Lathrop, Ca