ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT
North County Corridor Phase 1 Expressway

Resolution TCEP-P-2021-07B
(will be completed by CTC)

1. FUNDING PROGRAM

- ☐ Active Transportation Program
- ☐ Local Partnership Program (Competitive)
- ☐ Solutions for Congested Corridors Program
- ☐ State Highway Operation and Protection Program
- ☒ Trade Corridor Enhancement Program

2. PARTIES AND DATE

2.1 This Project Baseline Agreement (Agreement) for the *North County Corridor Phase 1 Expressway*, effective on, June 23, 2021 (will be completed by CTC), is made by and between the California Transportation Commission (Commission), the California Department of Transportation (Caltrans), the Project Applicant, *Stanislaus County*, and the Implementing Agency, *Stanislaus County*, sometimes collectively referred to as the "Parties".

3. RECITAL

3.2 Whereas at its December 2, 2020 meeting the Commission approved the and included in this program of projects the *North County Corridor Phase 1 Expressway*, the parties are entering into this Project Baseline Agreement to document the project cost, schedule, scope and benefits, as detailed on the Project Programming Request Form attached hereto as Exhibit A and the Project Report attached hereto as Exhibit B, as the baseline for project monitoring by the Commission.

3.3 The undersigned Project Applicant certifies that the funding sources cited are committed and expected to be available; the estimated costs represent full project funding; and the scope and description of benefits is the best estimate possible.

4. GENERAL PROVISIONS

The Project Applicant, Implementing Agency, and Caltrans agree to abide by the following provisions:

4.1 To meet the requirements of the Road Repair and Accountability Act of 2017 (Senate Bill [SB] 1, Chapter 5, Statutes of 2017) which provides the first significant, stable, and on-going increase in state transportation funding in more than two decades.

4.2 To adhere, as applicable, to the provisions of the Commission:

- ☐ Resolution *Insert Number*, "Adoption of Program of Projects for the Active Transportation Program", dated
- ☐ Resolution *Insert Number*, "Adoption of Program of Projects for the Local Partnership Program", dated
- ☐ Resolution *Insert Number*, "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated
- ☐ Resolution *Insert Number*, "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated
- ☒ Resolution G-20-77, "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated December 2, 2020

4.3 All signatories agree to adhere to the Commission's Guidelines. Any conflict between the programs will be resolved at the discretion of the Commission.

4.4 All signatories agree to adhere to the Commission's SB 1 Accountability and Transparency Guidelines and policies, and program and project amendment processes.

4.5 The Stanislaus County agrees to secure funds for any additional costs of the project.

4.6 The Stanislaus County agrees to report to Caltrans on a quarterly basis; after July 2019, reports will be on a semi-annual basis on the progress made toward the implementation of the project, including scope, cost, schedule, outcomes, and anticipated benefits.

4.7 Caltrans agrees to prepare program progress reports on a quarterly basis; after July 2019, reports will be on a semi-annual basis and include information appropriate to assess the current state of the overall program and the current status of each project identified in the program report.

4.8 The Stanislaus County agrees to submit a timely Completion Report and Final Delivery Report as specified in the Commission's SB 1 Accountability and Transparency Guidelines.

4.9 All signatories agree to maintain and make available to the Commission and/or its designated representative, all work related documents, including without limitation engineering, financial and other data, and methodologies and assumptions used in the determination of project benefits during the course of the project, and retain those records for four years from the date of the final closeout of the project. Financial records will be maintained in accordance with Generally Accepted Accounting Principles.

4.10 The Transportation Inspector General of the Independent Office of Audits and Investigations has the right to audit the project records, including technical and financial data, of the Department of Transportation, the Project Applicant, the Implementing Agency, and any consultant or sub-consultants at any time during the course of the project and for four years from the date of the final closeout of the project, therefore all project records shall be maintained and made available at the time of request. Audits will be conducted in accordance with Generally Accepted Government Auditing Standards.

5. SPECIFIC PROVISIONS AND CONDITIONS

5.1 Project Schedule and Cost
See Project Programming Request Form, attached as Exhibit A.

5.2 Project Scope
See Project Report or equivalent, attached as Exhibit B. At a minimum, the attachment shall include the cover page, evidence of approval, executive summary, and a link to or electronic copy of the full document.

5.3 Other Project Specific Provisions and Conditions
In the event of a cost overrun the state will cover a share proportionate to the state contribution of the TCEP funding identified in the Project Programming Request (PPR) submitted with the project application. (For example, if the state/regional TCEP funding share was a 40/60 ratio, the state may fund no more than 40% of the cost overrun.)

Attachments:

Exhibit A: Project Programming Request Form
Exhibit B: Project Report

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT

North County Corridor Phase 1 Expressway

Resolution TCEP-P-2021-07B

David A. Leamon Digitally signed by David A. Leamon Date: 2021.01.27 11:04:39 -08'00' January 27, 2021

Date

Stanislaus County Public Works Director

Project Applicant

David A. Leamon Digitally signed by David A. Leamon Date: 2021.01.27 11:24:17 -08'00' January 27, 2021

Date

Stanislaus County Public Works Director

Implementing Agency

Dennis T. Agar Digitally signed by Dennis T. Agar Date: 2021.03.25 18:28:41 -07'00'

DENNIS T. AGAR

Date

District Director

California Department of Transportation

5.19.21

Toks Omishakin

Date

Director

California Department of Transportation

07/16/21

Mitchell Weiss

Date

Executive Director

California Transportation Commission

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5938-2020-0003 v5

Amendment (Existing Project)	☒ YES	☐ NO				Date	05/10/2021 16:22:59
Programs	☐ LPP-C	☐ LPP-F	☐ SCCP	☒ TCEP	☐ STIP	☐ Other	

District	EA	Project ID	PPNO	Nominating Agency	
10	0S801	1021000100	3507	Stanislaus Council of Governments	
County	**Route**	**PM Back**	**PM Ahead**	**Co-Nominating Agency**	
Stanislaus	108	R 29.700	R 32.400		
				MPO	**Element**
				STANCOG	Capital Outlay
Project Manager/Contact			**Phone**	**Email Address**	
Theron Roschen			209-525-4194	RoschenT@stancounty.com	

Project Title

North County Corridor Project - Phase 1 from Claribel Road to Clause Road.

Location (Project Limits), Description (Scope of Work)

The North County Corridor Project consists of 4 separate phases of construction totaling 18 miles in length. The scope of this project is for Phase 1. The corridor will be a high capacity bypass around the cities of Modesto, Riverbank and Oakdale as shown in Exhibit 1. The Phase 1 project will be an ultimate 6-lane divided expressway beginning at the intersection of Claribel Road & Oakdale Road, extending eastward to the intersection of Claribel Road & Claus Road. It will be access controlled with a 40'-70' median with grade separations over Roselle Avenue, Terminal Avenue and the Burlington Northern Santa Fe Railroad tracks. This new alignment will build a west-east expressway that will improve regional network circulation connecting from the western end of downtown Modesto to the eastward end joining SR-120 east of the City of Oakdale (Segments 1 to 4).

Component	Implementing Agency
PA&ED	Stanislaus County
PS&E	Stanislaus County
Right of Way	Stanislaus County
Construction	Stanislaus County

Legislative Districts					
Assembly:	5	Senate:	12	Congressional:	10

Project Milestone	Existing	Proposed
Project Study Report Approved		
Begin Environmental (PA&ED) Phase	06/01/2010	06/01/2010
Circulate Draft Environmental Document — Document Type EIR/EIS	07/31/2017	07/31/2017
Draft Project Report	07/17/2017	07/17/2017
End Environmental Phase (PA&ED Milestone)	05/22/2020	05/22/2020
Begin Design (PS&E) Phase	05/22/2020	05/22/2020
End Design Phase (Ready to List for Advertisement Milestone)	09/22/2022	09/22/2022
Begin Right of Way Phase	06/01/2020	06/01/2020
End Right of Way Phase (Right of Way Certification Milestone)	03/01/2022	03/01/2022
Begin Construction Phase (Contract Award Milestone)	06/01/2023	06/01/2023
End Construction Phase (Construction Contract Acceptance Milestone)	11/01/2025	11/01/2025
Begin Closeout Phase	11/01/2025	11/01/2025
End Closeout Phase (Closeout Report)	11/01/2026	11/01/2026

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5938-2020-0003 v5

Date 05/10/2021 16:22:59

Purpose and Need

Segment 1 is the next step in accomplishing the goal of building the full bypass around the cities of Modesto, Riverbank and Oakdale connecting the eastern portion of the County to State Route 99. Its purpose of the Project is to:

- Reduce average daily traffic volumes and current traffic congestion and accommodate anticipated future traffic on the existing SR-108 and the surrounding regional transportation network in Stanislaus County and the cities of Modesto, Riverbank, and Oakdale.
- Support the efficient movement of goods and services throughout the region for the benefit of the regional economy by providing a more direct and dependable truck route, increasing the average operating speeds of all vehicles, and reducing the number of areas of conflict between motorized traffic and non-motorized means of travel; and,
- Improve the efficiency of interregional travel by reducing travel times for long distance commuters, recreational traffic, and interregional goods movement.

The existing 2-lane highway/rural road passes through the center of Modesto, Riverbank and Oakdale. During commute hours and seasonal weekend tourist traffic, portions of SR 108 are heavily congested causing significant delay for through traffic and preventing the efficient movement of local traffic. This outdated facility experiences an accident rates 35% higher than the states average for similar facilities. As the backbone east-west route for commerce, commuters and tourists, SR 108 no longer meets the needs of the region it serves. The need for the project is to address the following concerns:

- Travel conditions in the region, including traffic congestion on existing SR 108 will continue to worsen due to regional population growth and projected traffic volume increases.
- Traffic congestion on existing truck routes (SR 108/SR 120) will continue to hinder the efficient movement of goods and services; and
- Existing SR 108 is part of the interregional system, and interregional circulation will become increasingly constrained as travel times on existing SR 108 increase substantially with planned residential and employment growth.

NHS Improvements ☐ YES ☒ NO	Roadway Class NA	Reversible Lane Analysis ☐ YES ☒ NO

Inc. Sustainable Communities Strategy Goals ☒ YES ☐ NO Reduce Greenhouse Gas Emissions ☒ YES ☐ NO

Project Outputs

Category	Outputs	Unit	Total
Bridge / Tunnel	At-grade crossings eliminated	SQFT	37,400
Bridge / Tunnel	New bridges/tunnels	SQFT	39,950
ADA Improvements	Install new detectable warning surface	SQFT	750
Rail/ Multi-Modal	Grade separations/ rail crossing improvemnets	EA	1
Bridge / Tunnel	New interchanges	SQFT	40,800
ADA Improvements	New crosswalk	LF	1,320
ADA Improvements	New curb ramp installed	EA	35
Bridge / Tunnel	New local road bridge structures/tunnels	SQFT	24,920
Pavement (lane-miles)	Ramps and Connectors constructed	Miles	1.59
Active Transportation	Bicycle lane-miles	Miles	2.4
Pavement (lane-miles)	Local road - new	Miles	2
Pavement (lane-miles)	Mainline Shoulders construction	Miles	3.12
Pavement (lane-miles)	Mixed flow mainline constructed	Miles	6.24
TMS (Traffic Management Systems)	Changeable message signs	EA	2
Pavement (lane-miles)	Intersections constructed	Miles	4.83

Date 05/10/2021 16:22:59

Additional Information

The project limits of the Phase 1 project are within the project limits of the overall North County Corridor as included in the signed Project Report. The estimated project limits of Phase 1 is PM R29.7/R32.4 based on the overall project alignment and existing project limits. Note that Phase 1 will remain a local road after construction and that the actual postmiles may be adjusted when the ultimate North County Corridor is constructed and the postmiles of the realignment of SR 108 is transferred to the State Highway System.

Performance Indicators and Measures						
Measure	**Required For**	**Indicator/Measure**	**Unit**	**Build**	**Future No Build**	**Change**
Congestion Reduction	TCEP	Daily Vehicle Hours of Travel Time Reduction	Hours	4,124	2,882	1,242
	TCEP	Daily Truck Trips	# of Trips	0	0	0
	TCEP	Daily Truck Miles Traveled	Miles	0	0	0
Throughput	TCEP	Change in Truck Volume That Can Be Accommodated	# of Trucks	594,000	186,300	407,700
	TCEP	Change in Rail Volume That Can Be Accommodated	# of Trailers	0	0	0
			# of Containers	0	0	0
	TCEP	Change in Cargo Volume That Can Be Accommodated	# of Tons	0	0	0
			# of Containers	0	0	0
System Reliability	TCEP	Truck Travel Time Reliability Index	Index	0	0	0
	TCEP	Daily Vehicle Hours of Travel Time Reduction	Hours	9,591	6,702	2,889
Velocity	TCEP	Travel Time or Total Cargo Transport Time	Hours	21	13.5	7.5
Air Quality & GHG	LPPF, LPPC, SCCP, TCEP	Particulate Matter	PM 2.5 Tons	0	0	0
			PM 10 Tons	1	3	-2
	LPPF, LPPC, SCCP, TCEP	Carbon Dioxide (CO2)	Tons	62,259	128,563	-66,304
	LPPF, LPPC, SCCP, TCEP	Volatile Organic Compounds (VOC)	Tons	5	20	-15
	LPPF, LPPC, SCCP, TCEP	Sulphur Dioxides (SOx)	Tons	4	5	-1
	LPPF, LPPC, SCCP, TCEP	Carbon Monoxide (CO)	Tons	77	203	-126
	LPPF, LPPC, SCCP, TCEP	Nitrogen Oxides (NOx)	Tons	25	59	-34
Safety	LPPF, LPPC, SCCP, TCEP	Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries	Number	1	3	-2
	LPPF, LPPC, SCCP, TCEP	Number of Fatalities	Number	2	8	-6
	LPPF, LPPC, SCCP, TCEP	Fatalities per 100 Million VMT	Number	0.0018	0.0046	-0.0028
	LPPF, LPPC, SCCP, TCEP	Number of Serious Injuries	Number	142	569	-427
	LPPF, LPPC, SCCP, TCEP	Number of Serious Injuries per 100 Million VMT	Number	0.127	0.329	-0.202
Economic Development	LPPF, LPPC, SCCP, TCEP	Jobs Created (Direct and Indirect)	Number	1,019	0	1,019
Cost Effectiveness	LPPF, LPPC, SCCP, TCEP	Cost Benefit Ratio	Ratio	2.43	0	2.43

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PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5938-2020-0003 v5

District	County	Route	EA	Project ID	PPNO
10	Stanislaus	108	0S801	1021000100	3507

Project Title

North County Corridor Project - Phase 1 from Claribel Road to Clause Road.

Existing Total Project Cost ($1,000s)								
Component	Prior	21-22	22-23	23-24	24-25	25-26	26-27+	Total
E&P (PA&ED)								
PS&E	12,900							12,900
R/W SUP (CT)								
CON SUP (CT)								
R/W	33,000							33,000
CON			117,100					117,100
TOTAL	45,900		117,100					163,000

Proposed Total Project Cost ($1,000s)								
E&P (PA&ED)								
PS&E	12,900							12,900
R/W SUP (CT)								
CON SUP (CT)								
R/W	33,000							33,000
CON			117,100					117,100
TOTAL	45,900		117,100					163,000

Implementing Agency: Stanislaus County

Notes

Fund #1: Federal Disc. - BUILD–TIGER Discretionary Grants (Committed)

Program Code: 20.XX.400.300

Existing Funding ($1,000s)								
Component	Prior	21-22	22-23	23-24	24-25	25-26	26-27+	Total
E&P (PA&ED)								
PS&E								
R/W SUP (CT)								
CON SUP (CT)								
R/W	20,000							20,000
CON								
TOTAL	20,000							20,000

Funding Agency: Federal Highway Administration

Proposed Funding ($1,000s)								
E&P (PA&ED)								
PS&E								
R/W SUP (CT)								
CON SUP (CT)								
R/W	20,000							20,000
CON								
TOTAL	20,000							20,000

Notes

Fund #2:	Local Funds - Local Measure (Committed)								Program Code
	Existing Funding ($1,000s)								20.10.400.100
Component	Prior	21-22	22-23	23-24	24-25	25-26	26-27+	Total	Funding Agency
E&P (PA&ED)									Stanislaus Council of Governments
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W	13,000							13,000	
CON			18,100					18,100	
TOTAL	13,000		18,100					31,100	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W	13,000							13,000	
CON			18,100					18,100	
TOTAL	13,000		18,100					31,100	

Fund #3:	Other State - SECTION 190 GRADE SEPARATION PROGRAM (Committed)								Program Code
	Existing Funding ($1,000s)								20.30.207.811
Component	Prior	21-22	22-23	23-24	24-25	25-26	26-27+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			5,000					5,000	
TOTAL			5,000					5,000	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			5,000					5,000	
TOTAL			5,000					5,000	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5938-2020-0003 v5

Fund #4:	State SB1 TCEP - Trade Corridors Enhancement Account (Committed)								Program Code
	Existing Funding ($1,000s)								20.XX.723.100
Component	Prior	21-22	22-23	23-24	24-25	25-26	26-27+	Total	Funding Agency
E&P (PA&ED)									Caltrans HQ
PS&E									Project has received $20M FY 2018 BUILD Grant #17 that requires local/state match be 79% and 21% Federal. It is requested that the project TCEP funds be flagged for 'not being federalized'
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			20,000					20,000	
TOTAL			20,000					20,000	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			20,000					20,000	
TOTAL			20,000					20,000	

Fund #5:	Local Funds - Developer Fees (Committed)								Program Code
	Existing Funding ($1,000s)								20.10.400.100
Component	Prior	21-22	22-23	23-24	24-25	25-26	26-27+	Total	Funding Agency
E&P (PA&ED)									Stanislaus County
PS&E	12,900							12,900	Note current FTIP approved 7/9/2019 does not reflect current project funding status for Local Funds/County and will be revised.
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			58,300					58,300	
TOTAL	12,900		58,300					71,200	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E	12,900							12,900	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			58,300					58,300	
TOTAL	12,900		58,300					71,200	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5938-2020-0003 v5

Fund #6:	Other State - Road Maintenance and Rehabilitation Account (Committed)								Program Code
Existing Funding ($1,000s)									20.30.010.550
Component	Prior	21-22	22-23	23-24	24-25	25-26	26-27+	Total	Funding Agency
E&P (PA&ED)									Caltrans HQ
PS&E									Per SB1, Local RMRA eligible scopes include rail grade separation project. The North County Corridor project includes a rail grade separation component that will be funded by the RMRA account.
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			15,700					15,700	
TOTAL			15,700					15,700	
Proposed Funding ($1,000s)									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			15,700					15,700	
TOTAL			15,700					15,700	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5938-2020-0003 v5

Complete this page for amendments only Date 05/10/2021 16:22:59

District	County	Route	EA	Project ID	PPNO
10	Stanislaus	108	0S801	1021000100	3507

SECTION 1 - All Projects

Project Background

Updating postmile information only

Programming Change Requested

Reason for Proposed Change

Updating postmile information only

If proposed change will delay one or more components, clearly explain 1) reason for the delay, 2) cost increase related to the delay, and 3) how cost increase will be funded

Updating postmile information only

Other Significant Information

SECTION 2 - For SB1 Project Only

Project Amendment Request (Please follow the individual SB1 program guidelines for specific criteria)

Updating postmile information only

Approvals

I hereby certify that the above information is complete and accurate and all approvals have been obtained for the processing of this amendment request.

Name (Print or Type)	Signature	Title	Date

SECTION 3 - All Projects

Attachments
1) Concurrence from Implementing Agency and/or Regional Transportation Planning Agency
2) Project Location Map

10-Sta-108, 120, 219 (PM 27.5/44.5, 6.9/11.6, 3.7/4.8)
10-0S800 -1000000263 - 1443
20.XX.075/20.XX.025 – STIP/RIP/IIP
May 2020

PROJECT REPORT
North County Corridor (NCC)
New State Route 108 Project
To Request Project Approval and For Route Adoption

On **State Route 108, 120 and 219**

In **Stanislaus County, City of Modesto, City of Riverbank, and City of Oakdale, From 0.1 mile west of State Route 219 (Kiernan Avenue)/Tully Road Intersection in Stanislaus County to the new SR 108/120 Junction east of the City of Oakdale.**

I have reviewed the right-of-way information contained in this report and the right-of-way Data Sheet attached hereto, and find the data to be complete, current and accurate:

JAMIE LUPO, *Chief, Central Region Right-Of-Way*

APPROVAL RECOMMENDED:

MIMI HUIE, Project Manager

APPROVED:

DAN McELHINNEY, District 10 Director

5/22/2020

Date

Vicinity Map

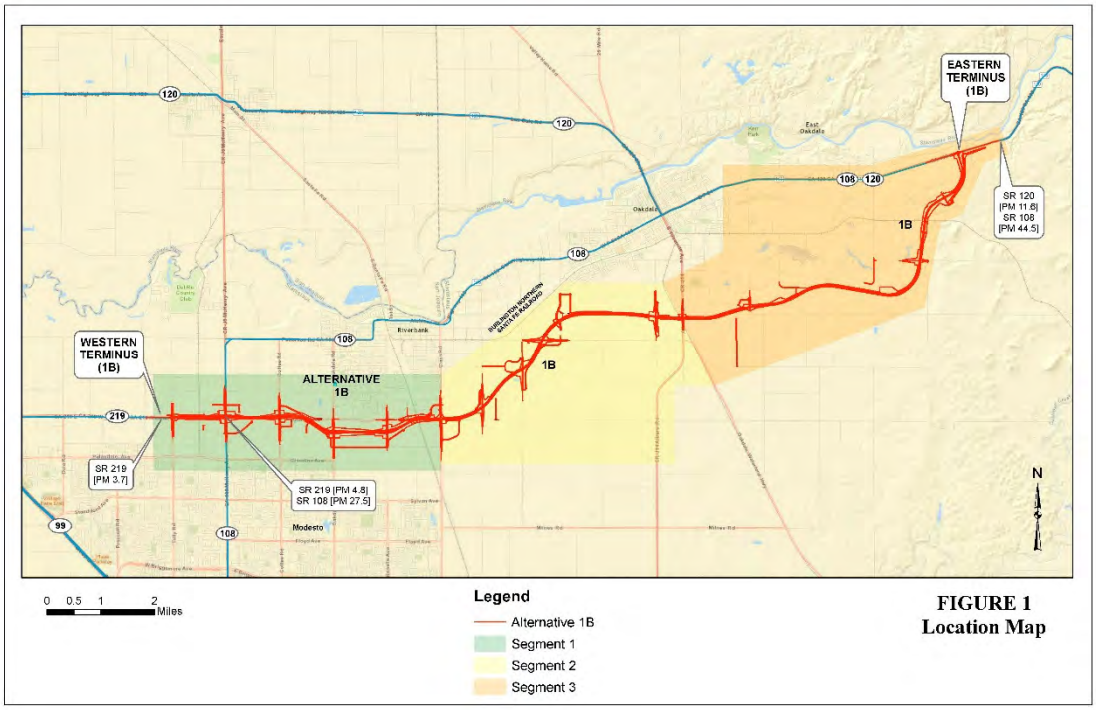


FIGURE 1
Location Map

This project report 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.

F. Jose Silva, PE

2/05/2020
DATE

TABLE OF CONTENTS

1. INTRODUCTION

The North County Corridor Transportation Expressway Authority (NCCTEA) proposes to construct the North County Corridor (NCC) New State Route 108 (SR 108) Freeway/Expressway Project (project). For this project, the NCCTEA is represented by Stanislaus County and the cities of Oakdale, Riverbank and Modesto per the approved Joint Powers Authority (JPA) agreement. The Stanislaus Council of Governments (StanCOG) and the California Department of Transportation (Caltrans) are ex-officio members to the NCCTEA. Caltrans is the CEQA and NEPA lead agency. This project would relocate SR 108 on a new alignment and the existing SR 108 would be relinquished to the respective public agency as a local roadway.

The project is located in the north central portion of Stanislaus County between the intersection of State Route 219 (SR 219) (Kiernan Avenue)/Tully Road at grade intersection at the western terminus and a new SR 108 expressway/State Route 120 (SR 120) expressway at grade intersection at the eastern terminus. The project area is generally bounded by portions of SR 108 and SR 120 on the north, portions of SR 219 (Kiernan Avenue) and Claribel Road on the south, Tully Road on the west, and Lancaster Road on the east.

Alternative 1B has been identified as the Preferred Alternative with an estimated current total capital cost of $680 million and escalated cost of $724 million. The proposed project will connect SR 219 near the City of Modesto to SR 120 near the City of Oakdale. Due to the vast length of over 18 miles of NCC, it covers various levels of urban and rural development and terrain. The project is analyzed as three distinct segments for environmental evaluation purposes and explaining the proposed improvements. Segment 1 represents the more urbanized area; Segment 2 represents a transition from urbanized to rural area; and Segment 3 represents the rural foothill area. Segment 1 begins at the SR 219 Kiernan Avenue/Tully Road intersection and proceeds to the vicinity of the existing Claus Road/Claribel Road intersection near the southeast portion of the City of Riverbank and northeast portion of the City of Modesto's future sphere of influence. In Segment 2, the alignment veers northeast from near the existing Claus Road/Claribel Road intersection and passes through the southern boundary of the City of Oakdale to just east of Albers Road. In Segment 3, the alignment continues north of the existing Warnerville Road/Emery Road intersection and continues on a northeasterly direction to the proposed eastern terminus at the new SR 108/SR 120 intersection west of the existing SR 120/Lancaster Road intersection.

In general, the proposed project improvements include:

- New Freeway/Expressway State Route

- At grade intersections and interchanges accessing new State Route
- Separated-grade structures at major roadways and railroad crossings
- Structures or culverts at various waterway crossings, such as Modesto Irrigation District (MID), Oakdale Irrigation District (OID) and Hetch Hetchy (SFPUC)
- Traffic management systems along new State Route
- County and City roadway modifications/improvements at various locations
- Controlled access throughout the State Route and portions of local roads at intersections and interchanges

The appropriate Project Development Category for this project is Category 1 because it proposes a new alignment with new right-of-way and access control; has major economic, social and environmental significance; and also, requires a route adoption and a freeway agreement.

Table 1-1 Project Summary

Project Limits	District 10 – Stanislaus County – SR 108 [PM 27.5/44.5], SR 219 [PM 3.7/4.8], SR 120 [PM 6.9-11.6]	
Number of Alternatives	4 Build Alternatives (1A, 1B, 2A, 2B)	
	Current Cost Estimate:	**Escalated Cost Estimate:**
Capital Outlay Support	$98 million	$101 million
Capital Outlay Construction	$412.4 million	$441.8 million
Capital Outlay Right-of-Way	$267.5 million	$281.6 million
Funding Source	STIP/RIP/IIP, Local	
Funding Year	Proposed 2020/21	
Type of Facility	Freeway/Expressway	
Number of Structures	29 to 45 including box culverts	
Environmental Determination or Document	Environmental Impact Report/Environmental Impact Statement (EIR/EIS)	
Legal Description	In Stanislaus County In and Near the cities of Modesto, Riverbank and Oakdale On Routes 108, 120 and 219 from 0.1 mile west of State Route 219 (Kiernan Avenue)/Tully Road Intersection to 5.0 miles east of Oakdale	
Project Development Category	1	

2. RECOMMENDATION

It is recommend that this Project Report (PR) be approved using the Preferred Alternative (Alternative 1B) and to proceed to the design phase. The Project Development Team (PDT) recommended the Preferred Alternative working with NCCTEA, which represents the affected local agencies. The proposed project is supported by Caltrans, StanCOG, Stanislaus County, City of Modesto, City of Riverbank and City of Oakdale.

3. BACKGROUND

Project History

The Stanislaus NCC Project (SR 219 (Kiernan Avenue)/SR 108 (McHenry Avenue) to SR 108/ SR 120) is a high-priority project for Stanislaus County, its rural and agricultural communities and the growing urbanized areas of the cities of Modesto, Oakdale, and Riverbank. The history of this project dates back to the Oakdale Bypass project which proposed improvements to SR 120 only. A project Study Report (PSR) was initiated in 2002 by Caltrans and StanCOG that studied seven corridors, but the effort was stopped prior to completion. The current NCC project resulted from the Feasibility Study and the Preliminary Design Report completed by StanCOG in 2008 in cooperation with Caltrans, the cities of Modesto, Riverbank and Oakdale, and Stanislaus County as part of the NCCTEA JPA. The Preliminary Design Report enabled StanCOG to program the Project Approval and Environmental Document (PA&ED) phase of the project in the 2008 State Transportation Improvement Plan (STIP) and obtain a letter of commitment from Caltrans for a replacement project to the Oakdale Bypass project. The alternatives developed in the Preliminary Design Report identified new alignments, representing approximately 25 miles of SR 108 realignment, between State Route 99 (SR 99) in the City of Modesto to 7.7 miles east of the existing SR 108/SR 120 junction, located in the City of Oakdale. The Preliminary Design Report focus was to provide a west-east freeway/expressway to accommodate anticipated growth in the area, to provide separation between the local and regional traffic, to provide regional connectivity and to improve traffic operations. The Preliminary Design Report alternatives included approximately 10 interchanges, four grade separated railroad crossings and five at-grade intersections. In April 2010, with Caltrans as the lead agency, NCCTEA completed a Route Adoption Project Report and Program Level Environmental Impact Report (PEIR) that resulted in NCC proposing to replace the existing SR 108 conventional highway through the cities of Riverbank and Oakdale and portions of Stanislaus County. The PEIR addressed a study corridor approximately 2,000-foot wide, from near the SR 219 (Kiernan Avenue)/SR 108 (McHenry Avenue) intersection to a new SR 108/SR 120 intersection east of Oakdale. In May 2010, the California Transportation Commission (CTC) approved a Route Adoption for NCC to become the New SR 108. The New SR 108 was deemed a freeway from the junction of SR 108 (McHenry Avenue) /SR 219 (Kiernan Avenue) to near Albers Road south of the City of Oakdale and an expressway from near Albers Road to the new SR 108/SR 120 junction. The project PA&ED phase was initiated in summer of 2010

and continued through September 2012 with the limits proposed to be from SR 99 to SR 120. The western terminus was proposed to be SR 99 near the community of Salida to address connection to another major freeway. However, in October 2012, due to joint efforts between NCCTEA and Caltrans to revisit land-use plans, regional network, and traffic projections, the project was re-scoped with a modified western terminus for an approximate 18 mile facility consistent but slightly modified from the May 2010 route adopted corridor limits. The modified limits begin near SR 219 (Kiernan Avenue)/Tully Road intersection, one mile west of existing SR 108 (McHenry Avenue)/SR 219 (Kiernan Avenue) intersection, and terminate east of the City of Oakdale at a new SR 108/SR 120 intersection. The re-scoped project with the modified western terminus was approved by Caltrans for continuing PA&ED efforts in October 2012. There has not been any right-of-way acquisition for the NCC project. The approximate four-mile portion between the new western terminus and SR 99 near Salida is to be improved using the SR 219 roadway with future improvements via a separate project.

The Draft Project Report (DPR) was approved July 17, 2017 for approving the circulation of the Draft Environmental Document (DED) during late 2017 with a public hearing conducted on September 7, 2017.

Identification of a Preferred Alternative

After evaluating all comments received during the public review period for the Draft Environmental Impact Report/Environmental Impact Statement, Caltrans has selected Alternative 1B as the Preferred Alternative.

After review of public comments, the PDT met on February 5, 2018 to discuss the proposed project alternatives. During the meeting, the four Build Alternatives in the environmental document (Alternatives 1A, 1B, 2A, and 2B, see **Figure 1-1**) were discussed relative to any issues raised by the public during the public review period and the local agencies' input on the locally preferred alternative. It was then determined that Alternative 1B was the alternative preferred by the public, associated local agencies, and Caltrans.

As a result, The PDT recommended Alternative 1B as the Preferred Alternative for the following reasons:

- Alternative 1B meets the purpose and need of the project.
- Alternative 1B has fewer adverse impacts to homes and businesses in the area.
- Alternative 1B maximizes traffic operations compared to Alternatives 2A or 2B.
- Alternative 1B is closest to the urbanized areas and planned growth areas in the region.
- Alternative 1B was preferred by the public as expressed during public meetings and demonstrated through the public comments with 41 comments in support of the alternative.

- The local jurisdictions (City of Modesto, City of Oakdale, City of Riverbank, and Stanislaus County) unanimously support the selection of Alternative 1B as the locally preferred alternative.

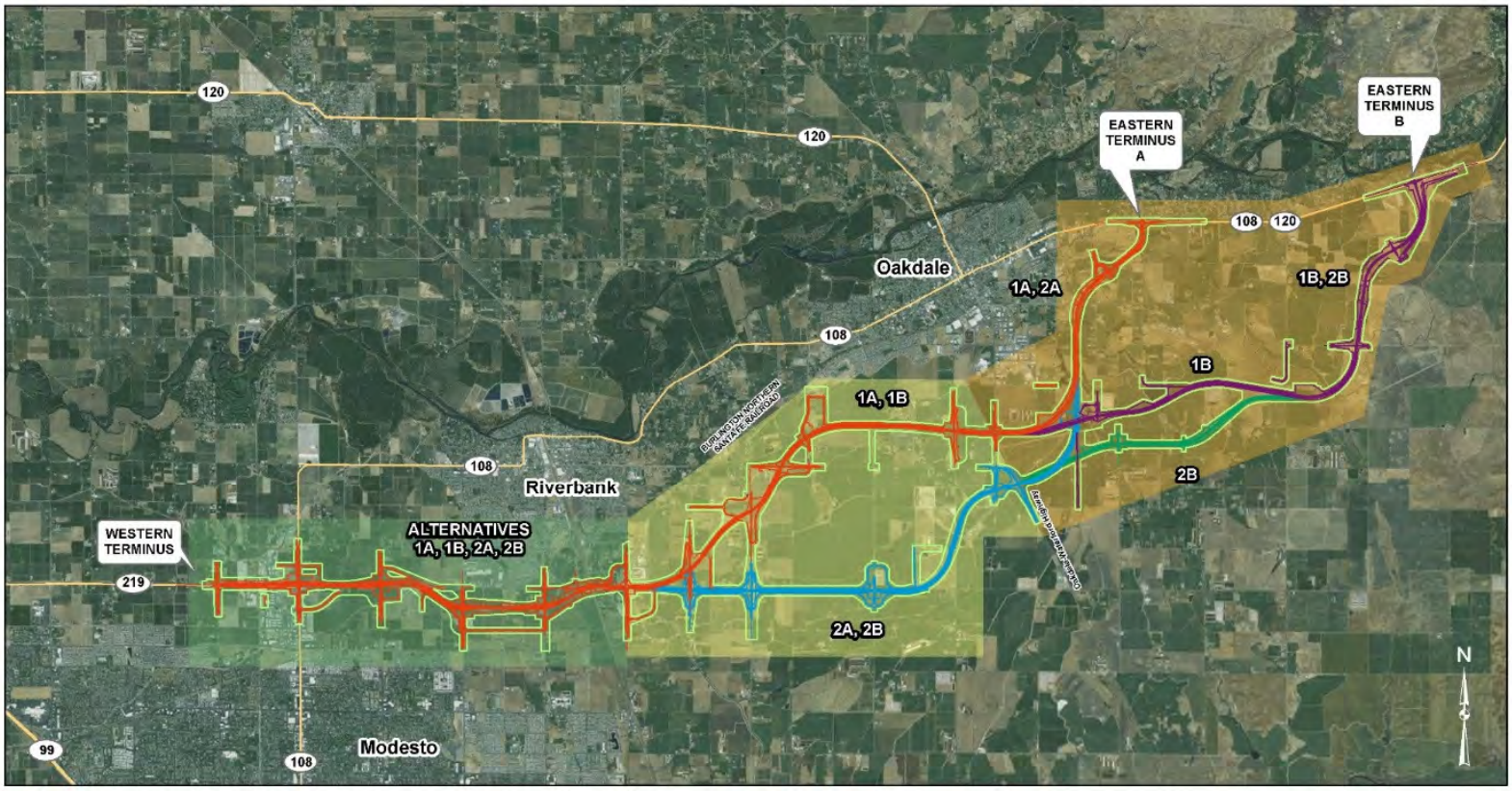


FIGURE 1-1
Build Alternatives

Community Interaction

Two public scoping meetings, eight community focus group meetings, two public information meetings, and one environmental focus meeting occurred between September 2010 and July 2014. Community members that live in the vicinity of the project area attended these meetings and expressed a variety of comments and suggestions for the project. The project design team reviewed concerns identified. Information from these meetings is summarized in **Table 3-1.** Additionally, meetings with individual property owners occurred throughout the project planning and community outreach to discuss potential impacts and address their concerns, including access control. Public comments were also received in all regular meetings held between 2008 and 2014 by the NCCTEA and the NCC Technical Advisory Committee (TAC) that took place throughout the Route Adoption and NCC project.

Table 3-1 Summary of Public Meetings

Date	Number of Attendees	Location	Topics Discussed
September 8, 2010	112	Oakdale Community Center	Public Scoping Meeting. Discussed a range of alternatives and identify the potentially significant issues to be analyzed in depth in the environmental documents.
September 13, 2010	152	Salida Regional Library	Public Scoping Meeting. Discussed a range of alternatives and identify the potentially significant issues to be analyzed in depth in the environmental documents.
December 8, 2010	24	StanCOG Board Room	Community Focus Group Meeting. The group's roles and responsibilities, expectations, and communication protocols were discussed.
March 9, 2011	18	StanCOG Board Room	Community Focus Group Meeting. Original 17+ alternatives had been narrowed to a reasonable range. The environmental planners began their technical analysis. Discussions on Permit to Enter (PTE) status (50% response).
June 8, 2011	13	StanCOG Board Room	Community Focus Group Meeting. Presented the Build Alternatives that were moving forward in the environmental studies. Provided a preview of displays for June 16, 2011 public meeting.
June 16, 2011	121	Riverbank Community Center	Public Information Meeting. Provided project displays and exhibits. Received public comments. Discussed environmental process, alternatives screening criteria, and the environmental and engineering studies that are underway.
September 28, 2011	Approximately 13	StanCOG Board Room	Community Focus Group Meeting. Presented project changes and updates.
November 9, 2011	13	StanCOG Board Room	Community Focus Group Meeting, Presented project changes and updates.

Date	Number of Attendees	Location	Topics Discussed
November 21, 2011	33 new property owners	Riverbank Council Chambers	A special community meeting with the new property owners that now required PTEs.
February 29, 2012	14	StanCOG Board Room	Community Focus Group Meeting. Presented changes and updates.
June 13, 2012	Approximately 13	Riverbank Council Chambers	Community Focus Group Meeting. Presented changes and updates.
February 6, 2014	16	Riverbank	Community Focus Group Meeting. Presented project changes and updates.
March 6, 2014	Approximately 201	Riverbank Community Center	Public Information Meeting. Provided project displays and exhibits. Received public comments. Discussed environmental process, alternatives screening criteria, and the environmental and engineering studies that are underway.
September 7, 2017	Approximately 305	Gene Bianchi Community Center Oakdale	Public Hearing. Provided project displays and exhibits. Received public comments. In open forum format, discussed engineering alternatives, schedule, and environmental process.

The following dominant concerns and comments were expressed at the public meetings and public hearing:

- Negative effect on property values;
- Ingress and egress to properties;
- Gratitude for the project following the Kiernan/Claribel route;
- General access issues;
- Potential negative effects on local businesses in Riverbank and Oakdale;
- Skepticism about roundabouts;
- Noise;
- Negative impacts on agricultural land;
- Moving agricultural equipment to/from fields;
- Increased traffic; and,
- Negative impacts on birds.

Agency Coordination

During the NCC New SR 108 Route Adoption process, coordination took place with US Fish

and Wildlife Service (USFWS), US Army Corps of Engineers (USACE), and California Department of Fish and Wildlife (CDFW) to determine proper methods and action for endangered, threatened and special status species. In addition, input was also solicited from FHWA through the Section 6002 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) review process from public agency participants regarding the alternatives to be addressed in the environmental document.

As a continuation to the Route Adoption coordination, the NCCTEA coordinated with USFWS and CDFW as part of the NCC New SR 108 Project. In January 2014, the NCCTEA reintroduced the project to the agencies and requested concurrence on survey methodology.

Existing Facility

The project's study area is generally bound by portions of existing SR 108 and SR 120 on the north, portions of SR 219 (Kiernan Avenue) and Claribel Road on the south, Tully Road on the west, and Lancaster Road on the east. Within the limits of the project, the current location of SR 108 is primarily a conventional two-lane, undivided highway with two 12-foot wide lanes, flanked by 2-foot to 8-foot wide shoulders. SR 108 runs south to north as SR 108/McHenry Avenue and east of McHenry Avenue it runs west to east. East of Yosemite Avenue, SR 108 and SR 120 converge and share the same alignment within the study area. This roadway does widen out to four lanes at some locations.

Existing SR 108/McHenry Avenue functions as a "main street" through much of the project limits within the cities of Modesto, Riverbank and Oakdale. The route runs through the downtown centers of Riverbank and Oakdale, overlying portions of the local roadway network and leading to road capacity competition between local traffic and traffic passing through these communities as well as conflicts with pedestrian and bicycle traffic.

On SR 108 between the intersections of SR 108 (McHenry Avenue)/SR 219 (Kiernan Avenue)/Claribel Road and SR 108/SR 120/Lancaster Road, motorists are hindered by 83 public street intersections, of which 14 are signalized and 69 are unsignalized, and many private residential and commercial driveways that have direct access onto SR 108. The uncontrolled access has made existing SR 108 ineffective as a major west-east route. The route is highly congested during peak travel times, and these conditions are expected to worsen as traffic volumes increase. Many of the intersections have traffic signals or stop signs. During periods of high traffic volumes, motorists must wait at the intersections, causing further delay. Slower-moving trucks add to the congested traffic conditions. The following provides a brief description of other major roadways within the project area.

> *SR 219 (Kiernan Avenue)* is a west-east four-lane to six-lane divided conventional highway that extends approximately five miles from SR 99 near the community of

Salida to SR 108 (McHenry Avenue), where it continues easterly as Claribel Avenue, a Stanislaus County local road.

McHenry Avenue is a two-lane arterial north of Patterson Road in Stanislaus County to SR 120 in Escalon in San Joaquin County. McHenry Avenue south of Patterson Road is designated as SR 108 to Needham Street in the City of Modesto. South of Patterson Road, McHenry Avenue is mostly four or six lanes wide with a center two-way-left-turn-lane.

Patterson Road is a west-east two-lane roadway that is designated as SR 108 between McHenry Avenue and Callander Avenue in the City of Riverbank, and a two-lane minor arterial east of Callander Avenue. Patterson Road extends from McHenry Avenue to Albers Road south of the City of Oakdale.

Claribel Road is a west-east four-lane to two-lane minor arterial that extends from SR 219 (Kiernan Avenue) and SR 108 (McHenry Avenue) to southeast of the City of Oakdale.

Claratina Avenue is a west-east expressway that extends from McHenry Avenue to Oakdale Road. This roadway is a two-lane facility.

Tully Road is a south-north minor arterial that extends from 9th Street in the City of Modesto to Country Club Drive in Stanislaus County including a signalized intersection with SR 219 (Kiernan Avenue). This roadway varies in width from two to four lanes.

Coffee Road is a south-north minor arterial that extends from Scenic Drive in the City of Modesto to SR 108 (Patterson Road). This roadway varies in width from two to four lanes.

Oakdale Road is a south-north minor arterial that extends from Scenic Drive in the City of Modesto to Arrowwood Drive near the City of Riverbank. This roadway varies in width from two to five lanes.

Roselle Avenue is a south-north minor arterial that extends from Briggsmore Avenue in the City of Modesto to Patterson Road in the City of Riverbank. This roadway varies in width from two to four lanes.

Terminal Avenue is a south-north two-lane minor arterial that extends from Claus Road near the northeastern portion of the City of Modesto to Patterson Road in the City of Riverbank primarily along the Burlington Northern/Santa Fe Railroad right-of-way.

Claus Road is a north-south arterial that extends from SR 132 in southeastern portion of the City of Modesto to SR 108 in northeastern portion of the City of Riverbank. This roadway varies in width from two to six lanes.

Eleanor Avenue/McGee Avenue is a south-north two-lane minor arterial in Stanislaus County in which McGee Avenue extends from Rice Road to Claribel Road and continues as Eleanor Avenue from Claribel Road to SR 108.

Langworth Road is a south-north two-lane minor arterial that extends from Milnes Road to SR 108 between the cities of Riverbank and Oakdale.

Crane Road is a south-north collector roadway that extends from Walnut Street to Patterson Road near the western end of the City of Oakdale. This roadway varies in width from two to four lanes.

Bentley Road is a south-north two-lane minor arterial that extends from Milnes Road in Stanislaus County to Lexington Avenue south of the City of Oakdale.

Albers Road is a south-north two-lane minor arterial that extends from SR 132 to Warnerville Road, where it becomes Yosemite Boulevard.

Oakdale-Waterford Highway is a south-north two-lane rural highway that extends from SR 132 to Albers Road.

South Stearns Road is a south-north two-lane collector roadway in Stanislaus County that extends from Warnerville Road to SR 108/SR 120.

Atlas Road is a south-north two-lane residential road in East Oakdale that extends from SR 108/SR 120 to Whitetail Drive.

Smith Road is a south-north two-lane minor arterial in Stanislaus County that extends from Oakdale-Waterford Highway to Warnerville Road.

Alvarado Road is a west-east two-lane rural arterial in Stanislaus County that extends from Oakdale-Waterford highway to approximately 1.5 miles east of Ellenwood Road.

Stoddard Road is a south-north two-lane minor arterial in Stanislaus County that extends from Alvarado Road to Warnerville Road.

Sierra Road is a west-east two-lane arterial that extends from the City of Oakdale near South Yosemite Avenue to Wamble Road.

Wamble Road is a south-north two-lane collector roadway in Stanislaus County that extends from Fogarty Road to Orange Blossom Road.

Emery Road is a south-north two-lane collector roadway in Stanislaus County that extends from approximately one mile south of Warnerville Road to Fogarty Road.

Fogarty Road is a west-east two-lane collector roadway in Stanislaus County that extends from Wamble Road to Emery Road.

Lancaster Road is generally a west-east two-lane collector roadway in Stanislaus County that extends from Orange Blossom Road to SR 108/SR 120.

Overall, the existing transportation network serving the area relies upon Kiernan Ave and Claribel Road as the main access routes to SR 99. West-east traffic must either use Kiernan Ave/Claribel Road or pass through the City of Riverbank or Oakdale. The proposed project will enhance the circulation to SR 99 by providing a high capacity facility in support of the local street system.

The following are major facilities within the project area.

Railroad: Existing Burlington Northern/Santa Fe (BNSF) lines run northwest to southeast through Riverbank and Oakdale and will require a separated-grade structure crossing NCC. Sierra Railroad, which runs from the City of Oakdale to Jamestown in Tuolumne County, is used for tourist train rides and will also require a separated-grade structure crossing at NCC. Union Pacific Railroad (UPRR) has an abandoned line between Tully Road and SR 108 (McHenry Avenue) which is planned to be crossed by NCC with access control and no separated-grade structure.

Oakdale Municipal Airport: The airport is owned and managed by the City of Oakdale. It is open to the public and provides two 3000' runways, instrument approach capabilities, runway lighting and basic flight support services. There are 96 aircraft based on the field, 86 single engine and 10 multi-engine airplanes. An airport general plan is being prepared and an FAA Expansion Grant is available to fund flight safety and operational improvements. The preferred alternative will be constructed approximately 1 mile south of the airport.

Modesto Irrigation District Canal System: The Main Canal diverts water from the Tuolumne River at the La Grange Dam. The canal feeds into the Modesto Reservoir, then continues west and northwest skirting the east side of the City of Modesto and the west side of the City of Riverbank before turning west again north of the community of Salida and terminating at the Stanislaus River. The Main Canal and the eight laterals branching away from it operate on a gravity flow system. The canal network provides irrigation

water to approximately 60,000 acres, typically between mid-March and late October each year. Modesto Irrigation District canals will cross NCC at various locations with a total of 7 crossings in the preferred alternative.

Oakdale Irrigation District Canal System: Water is diverted from the Stanislaus River into an irrigation system that includes 40 miles of main canals and over 330 miles of laterals and pipelines. Oakdale Irrigation District canals will cross NCC at various locations with a total of 12 crossings in the preferred alternative.

Hetch Hetchy Transmission Lines: The Hetch Hetchy power plant is located at the Hetch Hetchy reservoir in Yosemite National Park and generates in excess of 400 megawatts per hour. Transmission lines deliver water and power to the City and County of San Francisco, the Modesto and Turlock Irrigation Districts and tenants at the San Francisco International Airport. The power system delivers an annual average of 1.7 billion kilowatt hours of electricity. Hetch Hetchy facilities will cross NCC at various locations with a total of 2 crossings of NCC and 5 crossings of adjacent local roads in the preferred alternative.

4. PURPOSE AND NEED

The purpose of the project is to:

- Reduce average daily traffic volumes and current traffic congestion and accommodate anticipated future traffic on the existing SR-108 and the surrounding regional transportation network in Stanislaus County and the cities of Modesto, Riverbank, and Oakdale;
- Support the efficient movement of goods and services throughout the region for the benefit of the regional economy by providing a more direct and dependable truck route, increasing the average operating speeds of all vehicles, and reducing the number of areas of conflict between motorized traffic and non-motorized means of travel; and
- Improve the efficiency of interregional travel by reducing travel times for long distance commuters, recreational traffic, and interregional goods movement.

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

- Travel conditions in the region, including traffic congestion on existing SR 108 will continue to worsen due to regional population growth and projected traffic volume increases;
- Traffic congestion on existing truck routes (SR 108/SR 120) will continue to hinder the efficient movement of goods and services; and

- Existing SR 108 is part of the interregional system, and interregional circulation will become increasingly constrained as travel times on existing SR 108 increase substantially with planned residential and employment growth.

A. Problem, Deficiencies, Justification

Currently, SR 108 and Claribel Road in the project area (two-lane highway and two-lane to four-lane urban street) operate at Level of Service (LOS) B and F, respectively in the AM and PM peak period, with maximum delay of 87.0 seconds/vehicle at the intersection of Claribel Road and Coffee Road. Stanislaus County's general plan defined minimum acceptable LOS C for roadway segments within Stanislaus County, and the general plans of the cities of Modesto, Riverbank, and Oakdale defined minimum acceptable LOS D for various roadway segments within the cities. Based on traffic data, travel conditions in the region will continue to worsen due to projected volume increase.

The accident history on SR 108, SR 120 and SR 219 by type of collision is presented in **Table 4-1.** Accident data based on Caltrans' District 10 Transportation Systems Network Traffic Accident Surveillance and Analysis System (TSN TASAS) data for the three-year period ending December 31, 2011, shows that the existing accident rates on existing SR 108 are well above the statewide averages for similar facilities. The high percentage of rear end accidents on SR 108 and SR 219 is partially associated with characteristics of a conventional highway such as relatively high traffic volumes traveling at high speeds, large numbers of conflict points, lack of turning lanes and lack of acceleration and deceleration lanes. SR 108 averages more than seven intersections per mile in the study area, and some sections have more than 15 intersections per mile. The existing stretch of SR 108 through the study area includes:

- 34 roadway segments;
- 69 unsignalized at-grade intersections;
- 14 signalized at-grade intersections;
- One railroad at-grade crossing;
- 143 residential driveways;
- 155 commercial driveways; and,
- Numerous farm access driveways.

Through the urban areas of SR 108, the high number of access points such as unsignalized public intersections and driveways, combined with the lack of turning lanes, increases the potential for rear end accidents as traffic on SR 108 slows or stops to accommodate ingress and egress turning movements at side streets and driveways. In addition, pedestrians and bicyclists are also present and require motorists to slow or stop to allow access on the road or to cross the road. Through suburban and rural areas of SR 108, with uncontrolled access points coupled with insufficient recovery area or non-standard shoulder width without a median and tight curvature of the road,

there is an increased potential for rear end and broadside accidents. In most cases, there is also a lack of turning lanes and decelerations lanes at driveways and side roads entering or exiting from SR 108. As shown in **Table 4-2**, the rate for accidents resulting in fatalities or injuries along the study segments of SR 108, SR 120 and SR 219 were higher than the statewide average for similar facilities.

Table 4-1 Accident History Data by Type

Type of Collision	SR 108 Between SR 219 (PM 27.618) and SR 120 (PM 38.235)		SR 108/SR 120 Between Yosemite Avenue (PM 5.116) and Lancaster Road (PM 11.410)		SR 219 between SR 99 (PM 0.116) and SR 108 (PM 4.858)		SR 108 between SR 132 (PM 22.438) and SR 219 (PM 27.618)	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Head On	16	4.20%	3	1.64%	6	3.53%	27	6.12%
Sideswipe	34	8.92%	25	13.66%	9	5.29%	51	11.56%
Rear End	206	54.07%	67	36.61%	86	50.59%	169	38.32%
Broadside	70	18.37%	46	25.14%	57	33.53%	143	32.43%
Hit Object	28	7.35%	22	12.02%	9	5.29%	21	4.76%
Overturn	3	0.79%	4	2.19%	0	0.00%	4	0.91%
Auto-Pedestrian	14	3.67%	9	4.92%	2	1.18%	14	3.17%
Other	10	2.62%	7	3.83%	1	0.59%	12	2.72%
Not Stated	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Total	381	100.00%	183	100.00%	170	100.00%	441	100.00%

Source: Caltrans District 10 TASAS data between January 1, 2009 and December 31, 2011.

Table 4-2 Accident History Data

ACCIDENT RATE COMPARISON

Facility	Number of Accidents			Accident Rate (accidents/million vehicle miles)					
				Actual			State Average		
	Total	**Fatal**	**Fatal + Injury**	**Fatality**	**Fatal + Injury**	**Total**	**Fatality**	**Fatal + Injury**	**Total**
SR 108 between SR 219 (PM 24.618) and SR 120 (PM 38.235)	381	5	163	**0.023**	**0.76**	**1.78**	0.017	0.51	1.26
SR 108/SR 120 between Yosemite Avenue (PM 5.116) and Lancaster Road (PM 11.410)	183	1	76	0.009	**0.66**	**1.58**	0.016	0.42	0.97
SR 219 between SR 99 (PM 0.116) and SR 108 (PM 4.858)	170	0	61	0.00	**0.56**	**1.56**	0.012	0.47	1.15
SR 108 between SR 132 (PM 22.438) and SR 219 (PM 27.610)	441	4	267	**0.025**	**1.66**	**2.73**	0.010	0.91	1.71

Note: Shading and **bold** denotes locations that exceed the statewide average for similar facilities.
Source: Caltrans District 10 TASAS data between January 1, 2009 and December 31, 2011.

The proposed project would provide improved LOS and traffic operations in the project area. As a result of the new controlled access facility, numerous driveways and uncontrolled access/conflict points would be eliminated. Furthermore, the existing SR 108, to be relinquished to the respective local agencies, would have reduced vehicle volumes and deficient traffic operations due to the NCC facility diverting regional and interregional traffic (particularly truck traffic) from existing SR 108. The facility lanes and shoulders will be designed to meet Caltrans standards for freeways/expressways, including medians for greater separation of opposing traffic. Grade separations at major roadways and railroad crossings will also decrease points of conflict along the corridor. Points of access will be controlled with at-grade signalized intersections and roundabouts and proposed interchanges with standard channelization, further decreasing conflicts with motorist entering and exiting the freeway/expressway facility. The project would include standard lighting, signage, traffic control devices and safety railings to improve road safety. Americans with Disabilities Act (ADA) standards and complete street accommodation for bicycle and pedestrian access and safe mobility will be provided where bicycles and pedestrians are not restricted. Bicycle safety will be improved with standard shoulder widths and intersection treatments throughout the expressway portion of the project. NCC would not preclude a complete streets facility from being designed approaching the project within the local jurisdictions. NCC is compatible with Caltrans' intended Complete Streets goals for transportation facilities within Stanislaus County. Due to these proposed improvements, accident rates for NCC are expected to be below the statewide average for similar facilities. Accident rates are also expected to be reduced on existing SR 108 and the surrounding regional transportation network in northern Stanislaus County and the cities of Modesto, Riverbank, and Oakdale.

Due to the rural setting and the lack of natural water courses in the general project area, there are no formal storm water facilities within the project limits that intercept, convey, and discharge to a downstream water feature. The majority of on-site runoff flows into vegetated roadside ditches and shallow swales, or sheet flows off the crowned roadway directly onto adjacent parcels. During significant storm events, there may be locations that experience localized flooding. NCC would contain the watershed runoff within the right-of-way of the facility via retention basins or side ditches fed by a network of drainage inlets, pipes, and downdrains. Existing water courses will be perpetuated through culverts crossing the facility at various locations.

B. Regional and System Planning

SR 108 begins in downtown Modesto at the junction with SR 132, then crosses a portion of the Sierra Nevada Mountains via Sonora Pass to State Route 395 near the Nevada state line. Within the project area, SR 108 is an important east-west corridor that provides access for the movement of people, goods, and services in Stanislaus County. SR 108 is also an important transportation route for agricultural products. SR 120 begins west of Manteca in San Joaquin County at Interstate 5, goes through Yosemite National Park and continues east to State Route 6 in Mono County. SR 120 through the project area serves as a commuter route and has a large amount of

recreational traffic for tourists visiting Yosemite National Park. It also serves local and regional local commerce and goods movement traffic. SR 219 begins near the community of Salida at SR 99 and continues approximately five miles through portions of the City of Modesto and Stanislaus County to SR 108 (McHenry Avenue)/Claribel Road intersection. SR 219 primarily serves agricultural and commercial trucks, but is also an increasingly important route used by commuters and local traffic in the City of Modesto as well as regional traffic from/to the cities of Riverbank and Oakdale.

Within the project area, SR 108 is included in the Interregional Road System (IRRS), is part of the Freeway and Expressway (F&E) System and is also included in the National Highway System (NHS). The route is not designated as a focus route or a high emphasis route and is not included in the Strategic Highway Network (STRAHNET). SR 108 through the project limits is identified as a Terminal Access Route and is a Surface Transportation Assistance Act (STAA) Truck Route on the National Truck Network through all of Stanislaus County. The 2030 route concept facility is a 4-lane expressway for the facility determined by NCC project traffic evaluation. The ultimate transportation corridor is the same as the concept facility per Caltrans' latest SR 108 Transportation Concept Report (August 2014).

Within the project area, SR 120 is included in the IRRS, is included in the F&E System, and is included on the NHS. The route is not designated as a focus route nor included in the STRAHNET but it is designated as a High Emphasis route. SR 120 within the project limits is identified as a Terminal Access Route and is a STAA Truck Route. The 2040 route concept facility is a 4-lane expressway for the portion of the route or the facility determined by NCC project traffic evaluation. Explain what is the facility determined by the NCC project traffic evaluation here briefly. The ultimate transportation corridor is the same as the concept facility per Caltrans' latest SR 120 Transportation Concept Report (June 2017).

Within the project area, SR 219 is not included in the IRSS or F&E System. The route is not a focus route, not a high emphasis route, not on the NHS, and not included in the STRAHNET. The route is part of the State Highway System (SHS), it is identified as a Terminal Access Route and SR 219 is a STAA Truck Route on the National Truck Network. The 20 to 25 year route concept facility is a 6-lane expressway/controlled access highway per Caltrans' SR 219 Corridor System Management Plan (September 2016) which was developed in cooperation with local agencies and California Highway Patrol (CHP). The ultimate transportation corridor is a 6-lane expressway/controlled access highway.

Existing SR 108, SR 120 and SR 219 are all accessible for pedestrians and bicycles. The proposed expressway within the NCC project limits would be accessible for bicycles along the shoulders, but not for pedestrians, except at crossings along local roadways. NCC would not preclude a complete streets facility from being designed approaching the project within the local jurisdictions.

The project (Project ID 1000000263) is included in the regional emissions analysis conducted by StanCOG for the 2018 Regional Transportation Plan (RTP). StanCOG adopted the 2018 RTP in July, 2018. This analysis found that the plan and therefore, the individual projects contained in the plan, are conforming projects and will have Air Quality impacts consistent with those identified in the State Improvement Plan for achieving the National Ambient Air Quality Standards (NAAQS).

Located in Stanislaus County, the project involves the cities of Modesto, Riverbank and Oakdale. NCC is included in Stanislaus County and cities of Modesto, Riverbank and Oakdale general plans. It is one component in a balanced system of planned transportation improvements that is consistent with local and regional plans, policies and objectives.

Transit

The proposed project would contribute to improving the operations of the existing transportation network system, including transit. A variety of transit services are provided in the project study area, including bus and passenger rail services. Bus service within the project study area is provided by Stanislaus Regional Transit (StaRT) and Modesto Area Express (MAX), which are operated by Stanislaus County and the City of Modesto, respectively. Opportunities for additional transit systems would be considered in the Preferred Alternative (Alternative 1B). Coordination with public transportation will be very important to minimize delays and maintain ridership.

During construction of this project, impacts to the SR 108, SR 120 and SR 219 facilities will be minimized and there will be minimal impacts to existing or future transit services. There will also be advanced signage in place prior to and during construction to inform motorists of roadway work.

Goods Movement

Stanislaus County is an important food-processing region. Poultry, dairy, and agricultural products from Stanislaus County are processed and distributed throughout the world every day. Goods movement is the result of production activities within and outside of the region, and movement takes place within a complex system of routes, modes, terminals, and warehouse facilities.

The State has recognized the importance of agricultural goods movement throughout the Central Valley. The State's Goods Movement Action Plan (November 2007) identifies four high-priority gateway regions in California, including the Central Valley, that are necessary to support the continued growth of California's economy. SR 99, Interstate 5 and important west-east corridors (SR 108, Patterson Road, and Claratina Avenue) that traverse Stanislaus County are located within these high-priority regions. Traffic congestion and operational conflicts between trucks

and passenger vehicles have been identified as key issues that need to be addressed to maintain efficient goods movement. The high percentage of trucks on the roads in the study area reflects the high demand in the area for goods movement.

Over 90 interstate truck lines and 100 contract carriers operate in the Stanislaus County region. These operators, distributed throughout the region, rely on the regional system of State Highways, expressways, intermodal yards (such as in the City of Ripon and the community of Empire), and major arterials to move supplies and products. The backbones of the highway freight systems in the region include, but are not limited to are SR 99, Interstate 5, and SR 132.

Trains provide an economical means of transporting bulk goods. The Stanislaus County region is serviced by two trans-continental railroad systems, the Union Pacific and the Burlington Northern Santa Fe Railroad; and two local railroad systems, the Modesto and Empire Traction Company and the Sierra Railroad. The Port of Stockton, 30 miles north of Stanislaus County, provides deep-water access to the Pacific Ocean. Rail and truck transport to and from the port is available. Within the study area, the Union Pacific Railroad runs parallel to SR 99 with an average of 19 trains per day traveling through the area.

The project's preferred alternative proposes to support efficient movement of goods by providing a new west-east transportation facility that will reduce the number of conflict areas with motorized and non-motorized traffic, increase the average operating speeds, and improve travel time reliability. The project would also improve goods movement efficiency at a regional level, which would strengthen the agricultural and general economy of Stanislaus County.

C. Traffic

Traffic studies for this project were completed in 2014/2015, including review of existing and forecasted volumes (Average Daily Traffic [ADT] and peak hour) and existing and forecasted level of service. Complete information for traffic studies conducted for this project is included in the Final Traffic Operations Report (FTOR) for the North County Corridor (Fehr & Peers, March 2015) and Traffic Operations Report Addendum (Fehr & Peers, September 2019). The *Traffic Operations Report Addendum* determined the previously analyzed opening year of 2022 and previously analyzed design year of 2042 should be updated to an opening year of 2026 and to a design year of 2046. Additionally, it establishes that roadways and intersections would not operate worse under the new opening/design years, the traffic benefits in the 2015 Traffic Operations Report remain valid, and new traffic impacts are unlikely based on similar land use forecasts.

All technical modeling was completed using the 2011 StanCOG RTP Model and the current applicable 2011 RTP/Air Quality model assumptions. The model was then calibrated to Existing AM, PM, and ADT volumes. In addition, future land use and roadway network assumptions were reviewed and approved by the PDT.

Traffic Volumes

Average daily traffic volumes in 2014 on existing SR 108 range from 15,200 vehicles along the McHenry Avenue portion of SR 108 to 22,300 vehicles on SR 108 in downtown Oakdale (see **Table 4-3**). Future 2046 (Design Year) daily traffic volumes are projected to increase. **Figure 4-1** shows projected 2046 No-Build daily traffic volumes in the transportation study area.

Table 4-3 Average Daily Traffic Volumes at Representative Locations

Volumes	SR 108 – McHenry Segment North of Modesto	SR 108 – Vicinity of Riverbank (Ladd/Patterson Road)	SR 108 – Downtown Oakdale
Existing 2014	15,200	21,100	22,300
2046 No-Build	19,200	25,000	31,200
Source: Fehr and Peers, 2015			

Existing (year 2014) traffic volumes are shown in **Figure 4-2**. Peak period intersection counts were conducted from 7:00 to 9:00 AM and from 4:00 to 6:00 PM at the 23 study intersections during a typical weekday (Tuesday through Thursday). **Figure 4-3** through **Figure 4-7** present the Future 2046 (Design Year) intersection traffic volumes under No-Build and Build Alternatives.

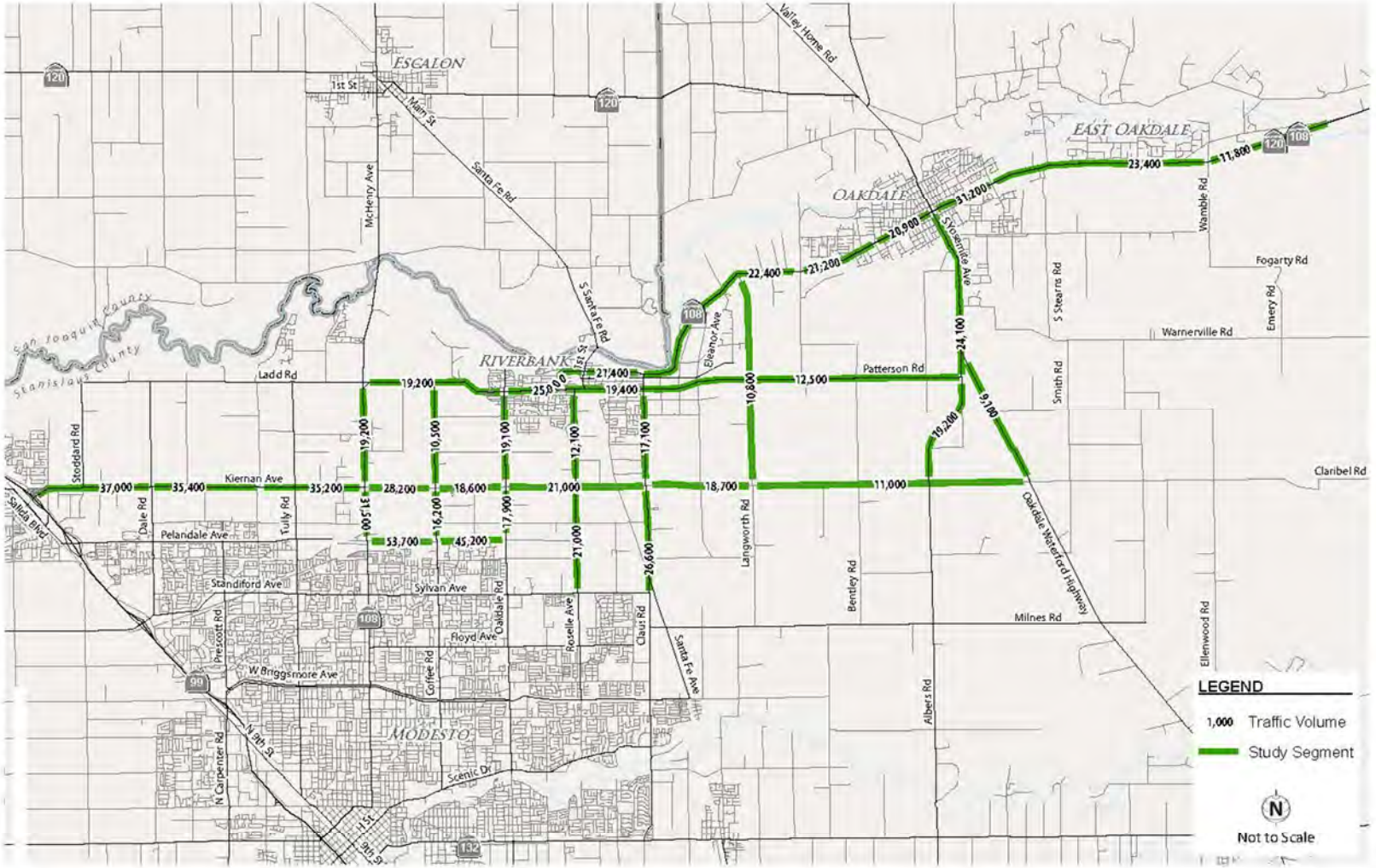
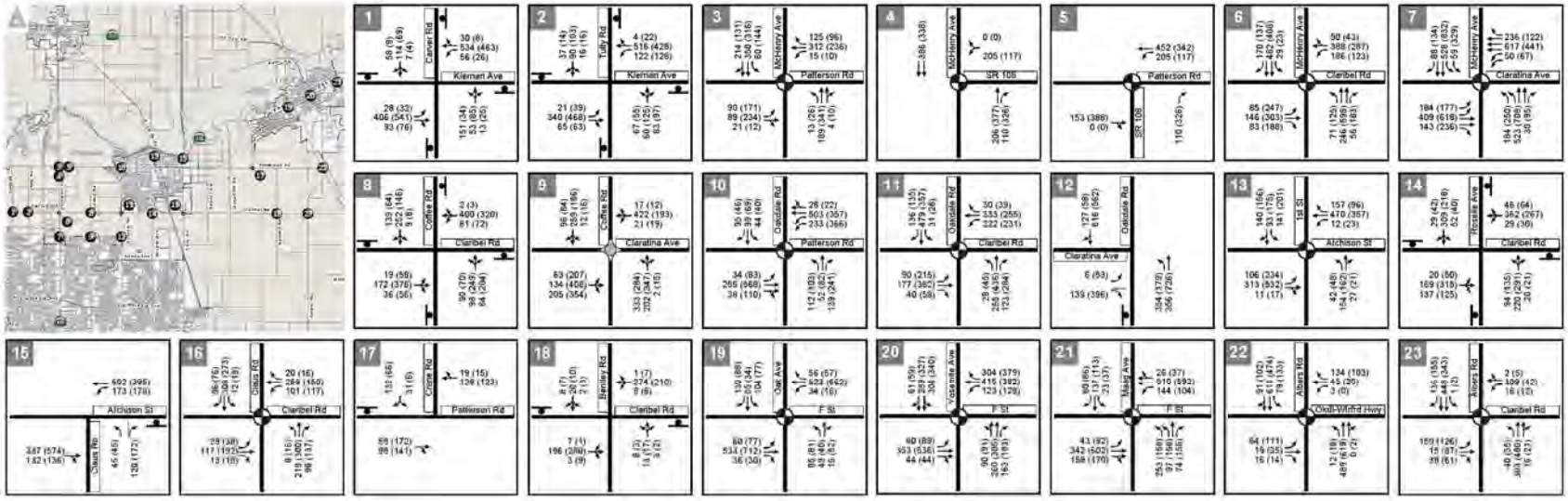


Figure 4-1

2046 No Project Daily Roadway Volumes



MAP KEY

Study Intersection

VOLUMES KEY

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Roundabout

Figure 4-2

Existing Intersection Traffic Controls, Lane Geometries, and Peak Hour Traffic Volumes

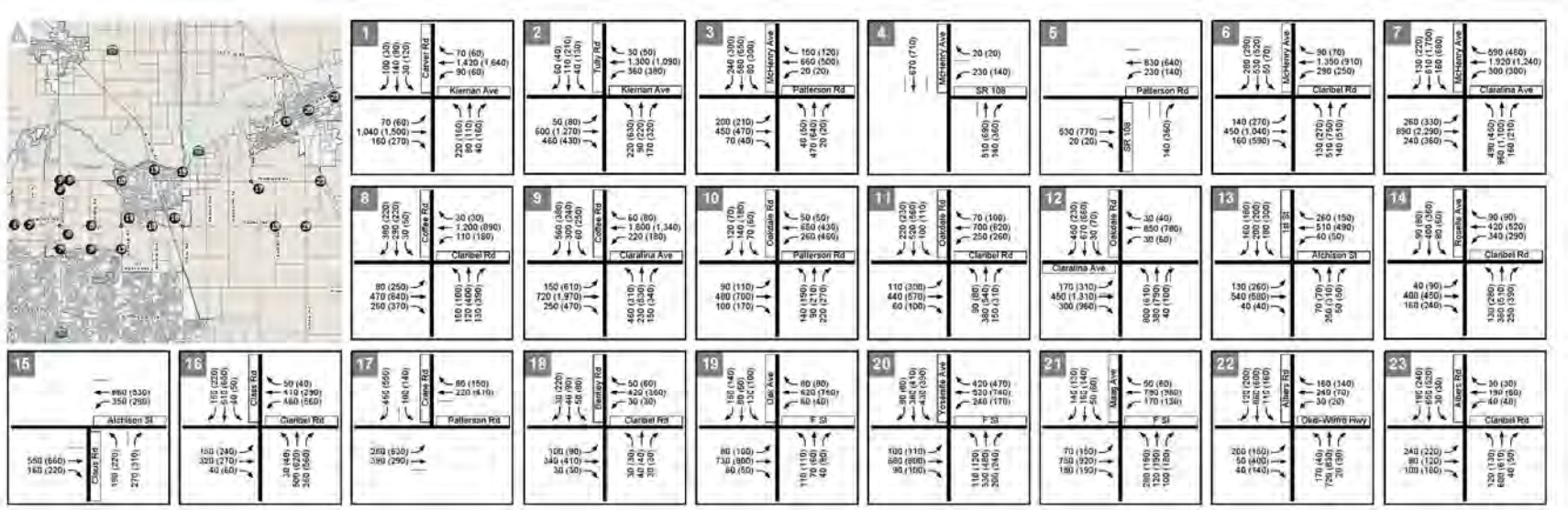


Figure 4-3

2046 No Project Peak Hour Intersection Volumes

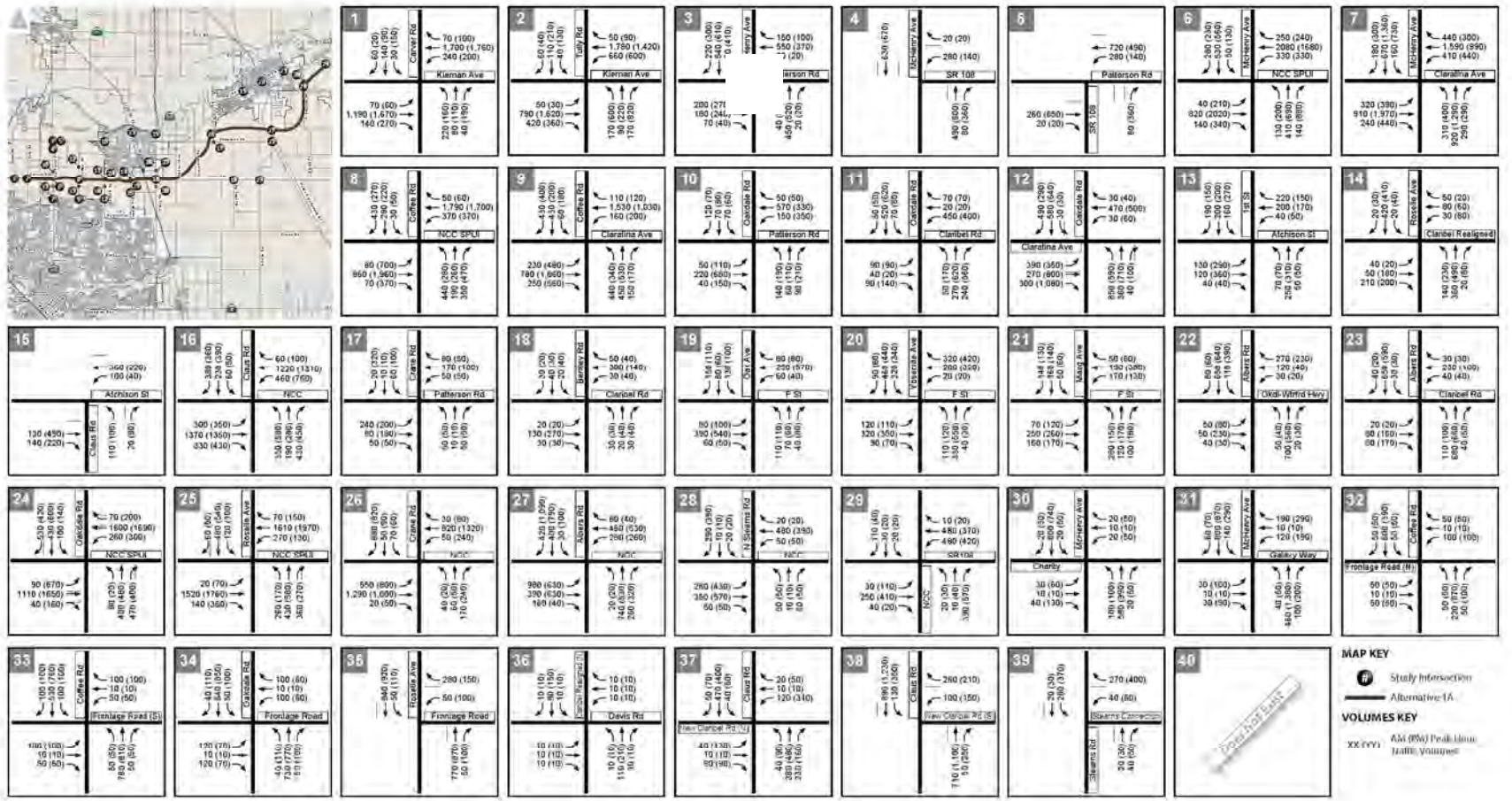


Figure 4-4

2046 Alternative 1A Peak Hour Intersection Volumes

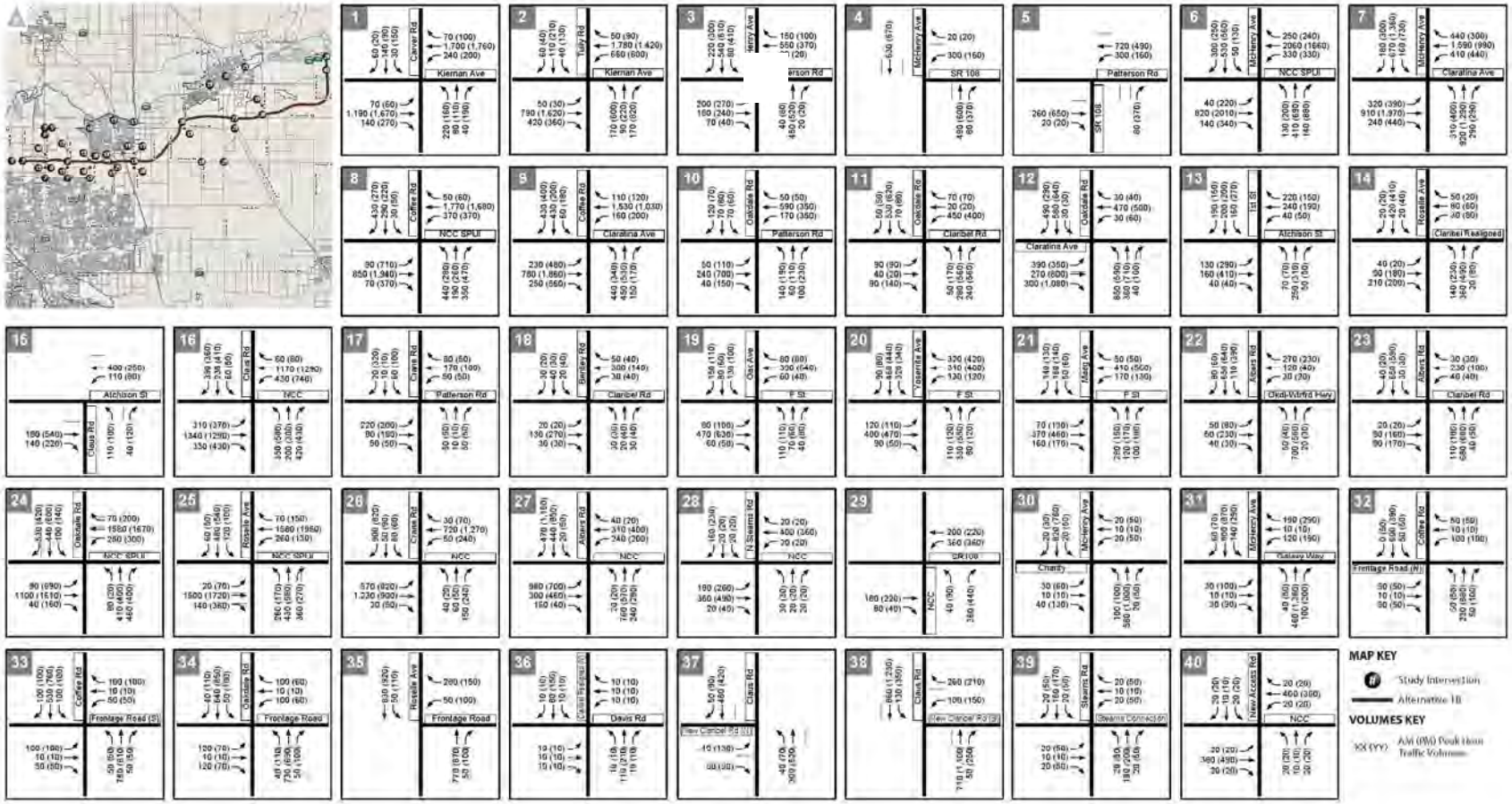


Figure 4-5

2046 Alternative 1B Peak Hour Intersection Volumes

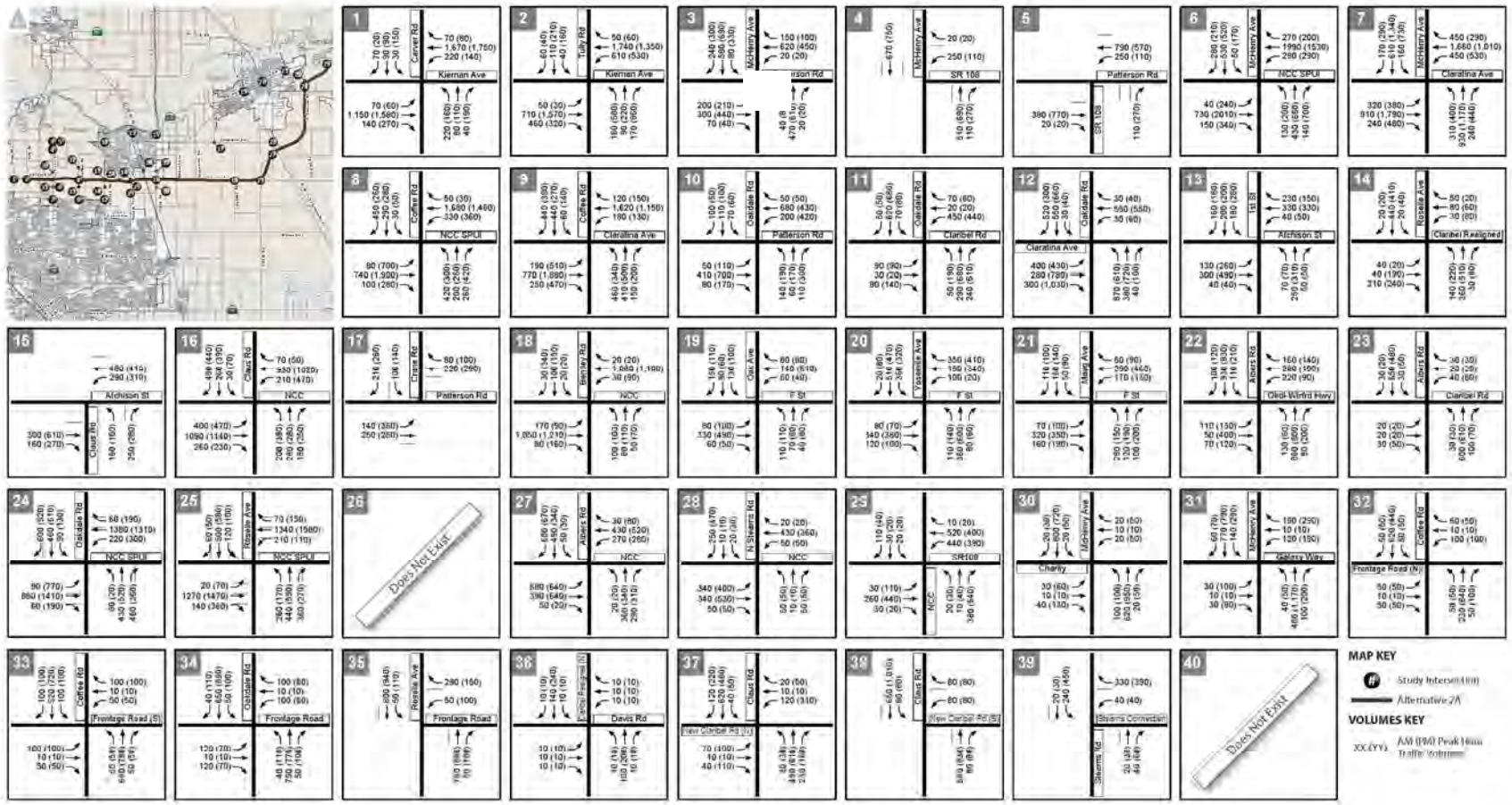


Figure 4-6

2046 Alternative 2A Peak Hour Intersection Volumes

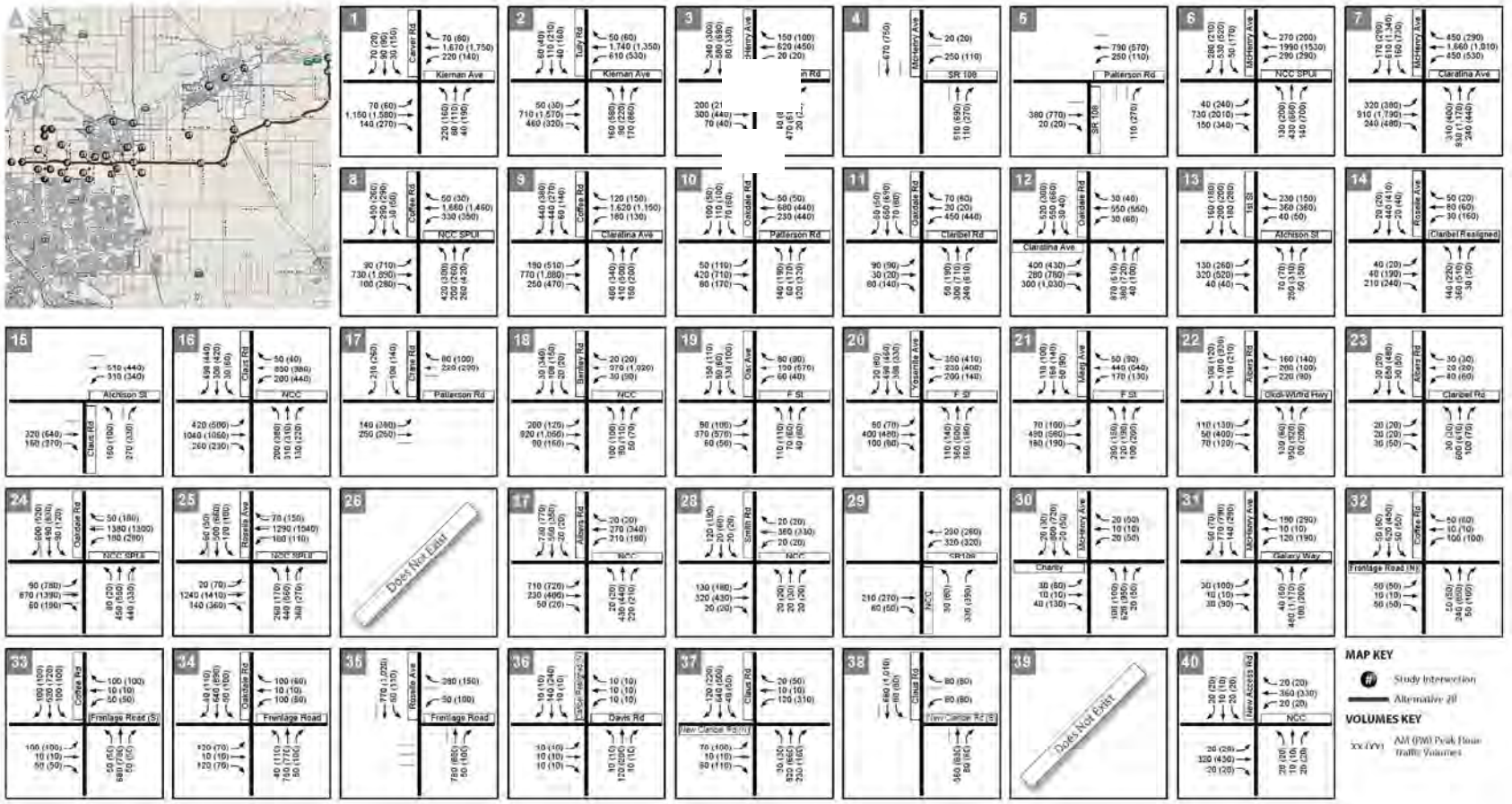


Figure 4-7

2046 Alternative 2B Peak Hour Intersection Volumes

Existing Intersection Operations

Traffic operations for the study area were analyzed using the Synchro/Sim Traffic 8.0 software program. LOS at roundabouts was calculated using the SIDRA (Signalized and Unsignalized Intersection Design and Research Aid) software package. As shown in **Table 4-4**, all study intersections operate at acceptable service levels during the AM and PM peak hours, except the following locations:

- Kiernan Avenue/Carver Road operates at LOS F during the AM peak hour
- Kiernan Avenue/Tully Road operates at LOS F during the PM peak hour
- Coffee Road/Claribel Road operates at LOS F during the AM and PM peak hours
- Coffee Road/Claratina Avenue operates at LOS F during the AM and PM peak hours
- Claribel Road/Roselle Avenue operates at LOS F during the AM and PM peak hours

Table 4-4 Existing Intersection Peak Hour Traffic Volumes and LOS

Intersection	Traffic Control[1]	Peak Hour	Delay (seconds/ vehicle)[2,3]	LOS [2,3]	Jurisdiction
1. Kiernan Avenue/Carver Road	Signal	AM	**82.7**	**F**	Caltrans
		PM	22.3	C	
2. Kiernan Avenue/Tully Road	Signal	AM	28.4	D	Caltrans
		PM	**56.6**	**F**	
3. McHenry Avenue/Ladd Road	Signal	AM	24.2	C	Stanislaus County
		PM	28.6	C	
4. McHenry Avenue/SR 108	Signal	AM	10.6	B	Caltrans
		PM	7.7	A	
5. SR 108/Patterson Rd	Signal	AM	7.4	A	Caltrans
		PM	9.7	A	
6. SR 108/Kiernan Avenue	Signal	AM	28.5	C	Caltrans
		PM	31.8	C	
7. SR 108/Pelandale Avenue	Signal	AM	28.1	C	Caltrans
		PM	38.2	D	
8. Coffee Road/Claribel Road	Signal	AM	**80.4**	**F**	Stanislaus County
		PM	**87.0**	**F**	
9. Coffee Road/Claratina Avenue	Round-about	AM	**57.4**	**F**	City of Modesto
		PM	**53.0**	**F**	
10. Oakdale Road/SR 108	Signal	AM	31.7	C	Caltrans
		PM	54.0	D	
11. Oakdale Road/Claribel Road	Signal	AM	33.3	C	City of Riverbank
		PM	38.8	D	
12. Oakdale Road/Claratina Avenue	SSSC	AM	10 (13.5)	A (B)	City of Modesto
		PM	11.5 (34.4)	B (D)	
13. SR 108/1st Street	Signal	AM	37.3	D	Caltrans
		PM	65.8	**E**	

Intersection	Traffic Control[1]	Peak Hour	Delay (seconds/ vehicle)[2,3]	LOS [2,3]	Jurisdiction
14. Claribel Road/Roselle Avenue	AWSC	AM	**52.5**	**F**	City of Riverbank/ Stanislaus County
		PM	**83.8**	**F**	
15. SR 108/Claus Road	SSSC	AM	4.5 (10.1)	A (B)	Caltrans
		PM	6.8 (17.5)	A (B)	
16. Claribel Road/Claus Road	Signal	AM	17.9	B	City of Riverbank
		PM	21.1	C	
17. Patterson Road/Crane Road	SSSC	AM	2.6 (4)	A (A)	Stanislaus County
		PM	2.9 (3.3)	A (A)	
18. Claribel Road/Bentley Road	SSSC	AM	1.9 (7.6)	A (A)	Stanislaus County
		PM	1.5 (7.8)	A (A)	
19. SR 108/Oak Avenue	Signal	AM	19.8	B	Caltrans
		PM	20.0	B	
20. SR 108/SR 120	Signal	AM	39.1	D	Caltrans
		PM	43.3	D	
21. SR 108/Maag Avenue	Signal	AM	23.2	C	Caltrans
		PM	23.4	C	
22. Patterson Road/Albers Road	Signal	AM	18.5	B	Stanislaus County
		PM	20.6	C	
23. Claribel Road/Albers Road	Signal	AM	16.2	B	Stanislaus County
		PM	11.2	B	

Notes: Results in **bold** represent unacceptable levels of service as determined by the applicable LOS standards of the relevant jurisdiction. Results based on SimTraffic simulation of 10 runs.
1. Signal = signalized intersection, SSSC = side street stop controlled intersection, AWSC = all-way stop-controlled intersection, Roundabout = roundabout controlled intersection
2. Signalized and all-way stop intersection level of service based on weighted average control delay per vehicle, according to the 2010 Highway Capacity Manual.
3. Side-street stop intersection level of service based on weighted average control delay per vehicle and worst approach control delay per vehicle, according to the 2000 Highway Capacity Manual in the notation: average (worst approach).

Source: Fehr & Peers, 2015 & 2019

Design Year 2046 Intersection Operations

With the exception of a few locations, any of the Build Alternatives in year 2046 improves overall traffic operations on most local streets when compared to No-Build conditions. **Table 4-5** presents the Year 2046 intersection level of service results for each of the study intersections under No-Build and the four Build Alternatives.

TABLE 4-5
2046 PEAK HOUR INTERSECTION ANALYSIS

Intersection	Traffic Control[1]	Peak Hour	No Project		Alternative 1A		Alternative 1B (Preferred)		Alternative 2A		Alternative 2B	
			Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]
1. Carver Road/Kiernan Avenue	Signal	AM	19	B	24	C	24	C	22	C	23	C
		PM	15	B	20	B	20	B	18	B	18	B
2. Tully Road/Kiernan Avenue	Signal	AM	18	B	17	B	17	B	18	B	13	B
		PM	27	C	21	C	21	C	16	B	20	B
3. McHenry Avenue/Ladd Road	Signal	AM	34	C	29	C	29	C	32	C	30	C
		PM	39	D	41	D	44	D	40	D	40	D
4. McHenry Avenue/SR 108	Signal	AM	12	B	11	B	11	B	11	B	11	B
		PM	9	A	8	A	8	A	9	A	9	A
5. SR 108/Patterson Road	Signal	AM	10	A	8	A	8	A	9	A	8	A
		PM	14	B	12	B	12	B	14	B	13	B
6. McHenry Avenue/Kiernan Avenue	Signal	AM	26	C	14	B	14	B	14	B	14	B
		PM	28	C	15	B	14	B	15	B	14	B
7. McHenry Avenue/Claratina Avenue	Signal	AM	33	C	30	C	30	C	31	C	29	C
		PM	53	D	39	D	42	D	36	D	37	D
8. Coffee Road/Claribel Road	Signal	AM	18	B	13	B	11	B	14	B	14	B
		PM	17	B	12	B	12	B	13	B	13	B

Notes: Results in **bold** represent unacceptable levels of service as determined by the applicable standards of the relevant jurisdictions. Results based on SimTraffic simulation of 10 runs.

1. Signal = signalized intersection, SSSC = side street stop controlled intersection, AWSC = all-way stop-controlled intersection, Roundabout = roundabout controlled intersection
2. Signalized and all-way stop intersection level of service based on weighted average control delay per vehicle, according to the *2010 Highway Capacity Manual*.
3. Side-street stop intersection level of service based on weighted average control delay per vehicle and worst approach control delay per vehicle, according to the *2010 Highway Capacity Manual* in the notation: average (worst approach).

Source: Fehr & Peers, 2015.

TABLE 4-5
2046 PEAK HOUR INTERSECTION ANALYSIS

Intersection	Traffic Control[1]	Peak Hour	No Project		Alternative 1A		Alternative 1B (Preferred)		Alternative 2A		Alternative 2B	
			Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]
9. Coffee Road/Claratina Avenue	Signal	AM	24	C	23	C	23	C	25	C	23	C
		PM	25	C	23	C	23	C	23	C	23	C
10. Oakdale Road/Patterson Road	Signal	AM	26	C	21	C	21	C	22	C	22	C
		PM	33	C	28	C	28	C	32	C	34	C
11. Oakdale Road/Claribel Road	Signal	AM	35	D	18	B	18	B	18	B	18	B
		PM	42	D	19	B	20	C	20	B	20	B
12. Oakdale Road/Claratina Avenue	Signal	AM	21	C	23	C	23	C	25	C	24	C
		PM	21	C	18	B	18	B	19	B	19	B
13. 1st Street/SR 108	Signal	AM	48	D	23	C	23	C	27	C	30	C
		PM	**56**	**E**	31	C	32	C	37	D	38	D
14. Roselle Avenue/Claribel Road	Signal	AM	39	D	4	A	4	A	4	A	4	A
		PM	**90**	**F**	4	A	5	A	5	A	5	A
15. Claus Road/SR 108	Signal	AM	15	B	5	A	5	A	8	A	8	A
		PM	20	B	6	A	7	A	11	B	11	B
16. Claus Road/Claribel Road	Signal	AM	31	C	20	C	20	C	18	B	17	B
		PM	38	D	25	C	27	C	19	B	21	C

Notes: Results in **bold** represent unacceptable levels of service as determined by the applicable standards of the relevant jurisdictions.

1. Results based on SimTraffic simulation of 10 runs.

2. Signal = signalized intersection, SSSC = side street stop controlled intersection, AWSC = all-way stop-controlled intersection, Roundabout = roundabout controlled intersection

3. Signalized and all-way stop intersection level of service based on weighted average control delay per vehicle, according to the *2010 Highway Capacity Manual*.

4. Side-street stop intersection level of service based on weighted average control delay per vehicle and worst approach control delay per vehicle, according to the *2010 Highway Capacity Manual* in the notation: average (worst approach).

Source: Fehr & Peers, 2015.

TABLE 4-5
2046 PEAK HOUR INTERSECTION ANALYSIS

Intersection	Traffic Control[1]	Peak Hour	No Project		Alternative 1A		Alternative 1B (Preferred)		Alternative 2A		Alternative 2B	
			Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]
17. Crane Road/Patterson Road	Signal	AM	5	A	3	A	3	A	3	A	3	A
		PM	14	B	3	A	3	A	4	A	9	A
18. Bentley Road/Claribel Road	SSSC/ Signal	AM	3	A	2	A	2	A	16	C	16	C
		PM	4	A	3	A	3	A	14	B	14	B
19. Oak Avenue/SR 108	Signal	AM	22	C	11	B	11	B	11	B	11	B
		PM	25	C	12	B	13	B	12	B	12	B
20. SR 120/SR 108	Signal	AM	**56**	**E**	28	C	28	C	28	C	35	C
		PM	**74**	**E**	32	C	36	D	32	C	36	D
21. SR 108/Maag Avenue	Signal	AM	24	C	18	B	18	B	20	C	21	C
		PM	25	C	17	B	18	B	18	B	18	B
22. Albers Road/Patterson Road	Signal	AM	28	C	18	B	18	B	23	C	23	C
		PM	26	C	25	C	25	C	26	C	25	C
23. Albers Road/Claribel Road	Signal	AM	21	C	16	B	16	B	6	A	7	A
		PM	15	B	13	B	13	B	8	A	8	A
24. Oakdale Road/NCC	Signal	AM	Not Applicable Under		9	A	9	A	8	A	8	A
		PM	No Project Conditions		19	B	13	B	13	B	14	B

Notes: Results in **bold** represent unacceptable levels of service as determined by the applicable standards of the relevant jurisdictions.

1. Results based on SimTraffic simulation of 10 runs.

2. Signal = signalized intersection, SSSC = side street stop controlled intersection, AWSC = all-way stop-controlled intersection, Roundabout = roundabout controlled intersection

3. Signalized and all-way stop intersection level of service based on weighted average control delay per vehicle, according to the *2010 Highway Capacity Manual*.

4. Side-street stop intersection level of service based on weighted average control delay per vehicle and worst approach control delay per vehicle, according to the *2010 Highway Capacity Manual* in the notation: average (worst approach).

Source: Fehr & Peers, 2015.

TABLE 4-5
2046 PEAK HOUR INTERSECTION ANALYSIS

Intersection	Traffic Control[1]	Peak Hour	No Project		Alternative 1A		Alternative 1B (Preferred)		Alternative 2A		Alternative 2B	
			Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]
25. Roselle Ave/NCC	Signal	AM	Not Applicable Under No Project Conditions		11	B	11	B	10	B	10	B
		PM			15	B	12	B	12	B	13	B
26. Crane Road/NCC	Signal	AM			11	B	11	B	Intersection Does Not Exist			
		PM			31	C	14	B				
27. Albers Road/NCC	Signal	AM			19	B	19	B	20	C	20	B
		PM			35	C	18	B	18	B	17	B
28. Stearns Connection/NCC	Signal (1B, 2B) / Roundabout (1A, 2A)	AM			5	A	5	A	4	A	7	A
		PM			5	A	5	A	5	A	8	A
29. NCC/ SR120/108	Roundabout	AM			5	A	4	A	5	A	4	A
		PM			5	A	4	A	5	A	4	A
30. McHenry Ave/Charity Way	Signal	AM			6	A	6	A	4	A	6	A
		PM			11	B	8	A	8	A	8	A
31. McHenry Ave/Galaxy Way	Signal	AM			5	A	5	A	6	A	6	A
		PM			29	C	10	A	10	A	10	A
32. Coffee Road/Frontage Road (N)	Signal	AM			2	A	2	A	2	A	2	A
		PM			10	A	2	A	2	A	4	A
33. Coffee Road/Frontage Road (S)	Signal	AM			2	A	2	A	3	A	3	A
		PM			12	B	2	A	2	A	4	A

Notes: Results in **bold** represent unacceptable levels of service as determined by applicable standards of relevant jurisdictions.

1. Results based on SimTraffic simulation of 10 runs.
2. Signal = signalized intersection, SSSC = side street stop controlled intersection, AWSC = all-way stop-controlled intersection, Roundabout = roundabout controlled intersection
3. Signalized and all-way stop intersection level of service based on weighted average control delay per vehicle, according to the *2010 Highway Capacity Manual.*
4. Side-street stop intersection level of service based on weighted average control delay per vehicle and worst approach control delay per vehicle, according to the *2010 Highway Capacity Manual* in the notation: average (worst approach).
5. Roundabout analysis based on Sidra 6.0 traffic analysis software using the HCM Roundabout Analysis methodology with California-specific values.

Source: Fehr & Peers, 2015.

TABLE 4-5
2046 PEAK HOUR INTERSECTION ANALYSIS

Intersection	Traffic Control[1]	Peak Hour	No Project		Alternative 1A		Alternative 1B (Preferred)		Alternative 2A		Alternative 2B	
			Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]	Delay (secs / veh)[2,3]	LOS[2,3]
34. Oakdale Road/Frontage Road (S)	Signal	AM	Not Applicable Under No Project Conditions		3	A	3	A	3	A	3	A
		PM			12	B	4	A	4	A	6	A
35. Roselle Ave/Frontage Road (S)	Signal	AM			5	A	5	A	5	A	5	A
		PM			11	B	5	A	5	A	5	A
36. Claribel Realigned (N)/Davis Road	SSSC	AM			2	A	2	A	2	A	2	A
		PM			2	A	2	A	2	A	2	A
37. Claus Road/Claribel Realigned (N)	Signal	AM			6	A	6	A	7	A	7	A
		PM			18	B	11	B	11	B	11	B
38. Claus Road/Claribel Realigned (S)	Signal	AM			7	A	7	A	2	A	2	A
		PM			19	B	2	A	2	A	4	A
39. Stearns/Stearns Connection	Signal (AWSC - 1B)	AM			3	A	3	A	3	A	Intersection Does Not Exist	
		PM			7	A	3	A	3	A		
40. New Access Road/NCC	Roundabout	AM			Intersection Does not Exist		4	A	Intersection Does Not Exist		4	A
		PM					4	A			4	A

Notes: Results in **bold** represent unacceptable levels of service as determined based on applicable standards of relevant jurisdictions.

1. Results based on SimTraffic simulation of 10 runs.
2. Signal = signalized intersection, SSSC = side street stop controlled intersection, AWSC = all-way stop-controlled intersection, Roundabout = roundabout controlled intersection
3. Signalized and all-way stop intersection level of service based on weighted average control delay per vehicle, according to the *2010 Highway Capacity Manual*.
4. Side-street stop intersection level of service based on weighted average control delay per vehicle and worst approach control delay per vehicle, according to the *2010 Highway Capacity Manual* in the notation: average (worst approach).
5. Roundabout analysis based on Sidra 6.0 traffic analysis software using the HCM Roundabout Analysis methodology with California-specific values.

Source: Fehr & Peers, 2015.

As shown in **Table 4-5**, 15 intersections are anticipated to operate at unacceptable levels under No-Build conditions during the AM and/or PM peak, including:

- Tully Road/Kiernan Avenue during the PM peak hour
- McHenry Avenue/Ladd Road during the AM and PM peak hours
- McHenry Avenue/Patterson Road during the AM and PM peak hours
- SR 108/Kiernan Avenue during the AM and PM peak hours
- SR 108/Claratina Avenue during the AM and PM peak hours
- Coffee Road/Claratina Avenue during the AM and PM peak hours
- Oakdale Road/Claribel Road during the AM and PM peak hours
- Oakdale Road/Claratina Road during the PM peak hour
- 1st Street/SR 108 during the AM and PM peak hours
- Roselle Avenue/Claribel Road during the AM and PM peak hours
- Claus Road/Claribel Road during the AM and PM peak hours
- Crane Road/Patterson Road during the PM peak hour
- Bentley Road/Claribel Road during the PM peak hour
- SR 120/SR 108 during the AM and PM peak hours
- Albers Road/Patterson Road during the AM and PM peak hours

The Build Alternatives are expected to reduce delay at many of the study intersections and the number of intersections operating at unacceptable service levels is expected to drop compared with No-Build conditions. However, there will still be intersections that continue to operate at unacceptable service levels in the future, even after project implementation. The following intersections would continue to operate at unacceptable levels of service under some or all of the Build Alternatives:

- McHenry Ave/Ladd Road during AM and PM peak hours of all alternatives
- SR 108/Patterson Road during AM peak hour of all alternatives
- McHenry Ave/Claratina Avenue during AM and PM peak hours of all alternatives
- Coffee Road/Claratina Avenue during PM peak hour of Alternatives 1A and 1B and the AM peak hour of Alternative 2A
- 1st Street/SR 108 during PM peak hour of Alternatives 1B, 2A, and 2B
- SR 120/SR 108 during the AM and PM peak hours of Alternative 1B and the PM peak hour of Alternative 2B
- Albers Rd/Patterson Rd during AM and PM peak hours of Alternatives 2A and 2B

For locations that operate at unacceptable service levels in the future, all four Build Alternatives would either result in no change to the intersection LOS or would provide a slight improvement.

Therefore, none of the Build Alternatives would result in a degradation of traffic operations at any of the study intersections.

As shown in **Table 4-5**, the new NCC intersections (including frontage roads) are anticipated to operate at acceptable service levels under all Build Alternatives. The new single point urban interchanges (SPUI) at SR 108 with Coffee Road, Oakdale Road, and Roselle Avenue are anticipated to operate at LOS C or better conditions.

Existing Two-lane Highway Analysis

Table 4-6 presents the two-lane highway LOS for the study segments along SR 108. As shown in **Table 4-6**, all study segments operate at unacceptable service levels except for the segment of SR 108/SR 120 between Wamble Road and Lancaster Road.

Table 4-6 Existing Two-Lane Highway LOS

Segment	AM Peak Hour			PM Peak Hour		
	% Time Spent Following	**Average Travel Speed (mph)**	**LOS**	**% Time Spent Following**	**Average Travel Speed (mph)**	**LOS**
SR 108 between McHenry Avenue and Oakdale Road	**81.60%**	**42.0**	**E**	**82.70%**	**41.3**	**E**
SR 108 between Claus Road and Crane Road	**84.70%**	**40.3**	**E**	**81.60%**	**40.6**	**E**
SR 108 between Crane Road and Oak Avenue	**81.70%**	**40.1**	**E**	**82.80%**	**39.5**	**E**
SR 108 between Maag Avenue and Wamble Road	**82.60%**	**40.5**	**E**	**83.30%**	**38.7**	**E**
SR 108/SR 120 between Wamble Road and Lancaster Road	55.60%	47.8	C	64.20%	46.3	C

Notes: Results in **bold** represent unacceptable level of service as determined by the applicable LOS standards of the relevant jurisdictions.
Source: Fehr & Peers, 2015 AND 2019

Design Year 2046 Two-Lane Highway Analysis

Table 4-7 presents the two-lane highway results for rural segments of SR 108 east of McHenry Avenue and of SR 120 east of Maag Avenue. All study segments are expected to operate at LOS E under No-Build conditions with the exception of SR 120 from Wamble Road to Lancaster Road, which would operate at LOS D or better. Construction of any of the four Build Alternatives would decrease the volume demand along SR 108 and SR 120, which would either increase or have no effect on average travel speed and either decrease or have no effect on percent time spent following behind another vehicle in a queue. Therefore, all Build Alternatives would either maintain or improve the LOS reported for each segment.

Year 2046 NCC Freeway/Expressway Analysis

The planned NCC facility would operate as a freeway between Tully Road and Roselle Avenue and as an expressway east of Roselle Avenue. For each Build Alternative, **Table 4-8** and **Table 4-9** present LOS results in each direction. The planned NCC freeway/expressway would operate at LOS C or better during the AM and PM peak hours for each Project alternative.

TABLE 4-7
2046 TWO-LANE HIGHWAY ANALYSIS BASED ON HCM

Location	Peak Hour	BFFS	No Project			Alternative 1A			Alternative 1B (Preferred)			Alternative 2A			Alternative 2B		
			PTSF	ATS	LOS	PTSF	ATS	LOS	PTSF	ATS	LOS	PTSF	ATS	LOS	PTSF	ATS	LOS
SR 108 from McHenry Avenue to Oakdale Road	AM	55	**78**	**39**	**E**	52	43	D	54	42	D	**71**	**40**	**E**	**72**	**40**	**E**
	PM		**88**	**39**	**E**	**87**	**39**	**E**	**88**	**39**	**E**	**88**	**39**	**E**	**88**	**38**	**E**
SR 108 from Claus Road to Crane Road	AM	55	**85**	**36**	**E**	33	46	C	43	45	D	73	40	D	75	40	E
	PM		**87**	**37**	**E**	76	43	D	80	42	D	**86**	**39**	**E**	**88**	**38**	**E**
SR 108 from Crane Road to Oak Avenue	AM	45	**85**	**27**	**E**	**72**	**33**	**E**	**75**	**32**	**E**	**71**	**35**	**E**	**72**	**34**	**E**
	PM		**86**	**27**	**E**	**77**	**31**	**E**	**81**	**29**	**E**	**75**	**31**	**E**	**78**	**30**	**E**
SR 120 from Maag Avenue to Wamble Road	AM	50	**88**	**30**	**E**	**88**	**30**	**E**	**72**	**36**	**E**	**88**	**30**	**E**	**78**	**35**	**E**
	PM		**91**	**28**	**E**	**91**	**28**	**E**	**79**	**35**	**E**	**91**	**28**	**E**	**85**	**32**	**E**
SR 120 from Wamble Road to Lancaster Road	AM	55	57	47	C	57	47	C	57	47	C	57	47	C	57	47	C
	PM		65	46	D	65	46	D	65	46	D	65	46	D	65	46	D

Bold denotes locations that operate overall at unacceptable service levels.
1.BFFS = Base Free-Flow Speed, mph
2. PTSF = Percent Time Spent Following, %
3. ATS = Average Travel Speed, mph
Source: Fehr & Peers, 2015

TABLE 4-8
2046 MULTILANE, FREEWAY, AND RAMP ANALYSIS BASED ON HCM - EASTBOUND

Location	Number of Lanes	Method	Peak Hour	Alt 1A		Alt 1B (Preferred)		Alt 2A		Alt 2B	
				Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
Carver Road to Tully Road	3	Multilane	AM	9	A	9	A	8	A	8	A
			PM	14	B	14	B	13	B	13	B
Tully Road to McHenry Avenue	3+Aux	Weave	AM	Weave	A	Weave	A	Weave	A	Weave	A
			PM	Weave	A	Weave	A	Weave	A	Weave	A
McHenry Avenue Off-Ramp	3+Aux		AM	Weave	A	Weave	A	Weave	A	Weave	A
			PM	Weave	A	Weave	A	Weave	A	Weave	A
McHenry Avenue On-Ramp	3+Aux		AM	Weave	A	Weave	A	Weave	A	Weave	A
			PM	Weave	C	Weave	C	Weave	B	Weave	B
McHenry Avenue to Coffee Road	3+Aux		AM	Weave	A	Weave	A	Weave	A	Weave	A
			PM	Weave	C	Weave	C	Weave	B	Weave	B
Coffee Road Off-Ramp	3+Aux		AM	Weave	A	Weave	A	Weave	A	Weave	A
			PM	Weave	C	Weave	C	Weave	B	Weave	B
Coffee Road On-Ramp	3	Merge	AM	9	A	9	A	8	A	8	A
			PM	16	B	16	B	15	B	15	B
Coffee Road to Oakdale Road	3	Basic	AM	7	A	7	A	7	A	6	A
			PM	14	B	14	B	13	B	13	B
Oakdale Road Off-Ramp	2	Diverge	AM	3	A	3	A	1	A	1	A
			PM	14	B	14	B	13	B	13	B
Oakdale Road On-Ramp	2	Merge	AM	11	B	10	B	8	A	8	A
			PM	15	B	14	B	12	B	12	B
Oakdale Road to Roselle Avenue	2	Basic	AM	15	B	14	B	14	B	12	B
			PM	19	B	18	B	16	B	16	B
Roselle Avenue Off-Ramp	2	Diverge	AM	19	B	19	B	17	B	16	B
			PM	23	C	23	C	21	C	20	C
Roselle Avenue On-Ramp	2	Merge	AM	19	B	19	B	17	B	17	B
			PM	20	B	20	B	17	B	17	B
Roselle Avenue to Claus Road	2	Multilane	AM	20	C	20	C	18	C	18	B
			PM	21	C	21	C	19	C	18	B

Notes:
1. Multilane = HCM Multilane Highways Analysis; Basic = HCM Basic Freeway Analysis; Merge = HCM Merge Analysis; Diverge = HCM Diverge Analysis; Weave = Leisch Method
2. Density is in passenger cars per mile per lane
Source: Fehr & Peers, 2015

Claus Road to Crane Road	2	Multilane	AM	19	C	19	C	13	B	12	B
			PM	19	C	18	B	15	B	13	B
Crane Road to Albers Road	2		AM	16	B	15	B	11	B	10	A
			PM	13	B	12	B	13	B	12	B
Albers Road to Stearns Road	2		AM	7	A	6	A	7	A	5	A
			PM	11	A	8	A	10	A	6	A
Stearns Road to SR 120	2		AM	4	A	4	A	4	A	4	A
			PM	6	A	5	A	6	A	5	A

Notes:
1. Multilane = HCM Multilane Highways Analysis; Basic = HCM Basic Freeway Analysis; Merge = HCM Merge Analysis; Diverge = HCM Diverge Analysis; Weave = Leisch Method
2. Density is in passenger cars per mile per lane
Source: Fehr & Peers, 2015

TABLE 4-9
2046 MULTILANE, FREEWAY, AND RAMP ANALYSIS BASED ON HCM - WESTBOUND

Location	Number of Lanes	Method	Peak Hour	Alt 1A		Alt 1B (Preferred)		Alt 2A		Alt 2B	
				Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
SR 120 to Stearns Road	2	Multilane	AM	6	A	5	A	5	A	4	A
			PM	5	A	4	A	4	A	4	A
Stearns Road to Albers Road	2		AM	8	A	6	A	8	A	5	A
			PM	8	A	6	A	9	A	5	A
Albers Road to Crane Road	2		AM	9	A	8	A	12	B	10	A
			PM	17	B	16	B	12	B	11	B
Crane Road to Claus Road	2		AM	18	B	17	B	12	B	11	B
			PM	22	C	21	C	16	B	15	B
Claus Road to Roselle Avenue	2		AM	20	C	20	C	20	C	16	B
			PM	23	C	23	C	19	C	18	C
Roselle Avenue Off-Ramp	2	Diverge	AM	22	C	21	C	19	B	18	B
			PM	24	C	24	C	20	C	20	C
Roselle Avenue On-Ramp	2	Merge	AM	18	B	18	B	16	B	16	B
			PM	21	C	20	C	17	B	17	B
Roselle Avenue to Oakdale Road	2	Basic	AM	17	B	16	B	16	B	14	B
			PM	19	C	18	C	15	B	15	B
Oakdale Road Off-Ramp	2	Diverge	AM	22	C	21	C	19	B	18	B
			PM	24	C	24	C	20	C	20	B
Oakdale Road On-Ramp	2	Merge	AM	21	C	21	C	19	B	19	B
			PM	20	B	20	B	17	B	17	B
Oakdale Road to Coffee Road	3	Basic	AM	13	B	13	B	12	B	12	B
			PM	12	B	12	B	11	A	10	A
Coffee Road Off-Ramp	3	Diverge	AM	19	B	19	B	18	B	18	B
			PM	18	B	18	B	16	B	16	B
Coffee Road On-Ramp	3+Aux	Weave	AM	Weave	B	Weave	B	Weave	A	Weave	A
			PM	Weave	A	Weave	A	Weave	A	Weave	A
Coffee Road to McHenry Avenue	3+Aux		AM	Weave	B	Weave	B	Weave	A	Weave	A
			PM	Weave	A	Weave	A	Weave	A	Weave	A
McHenry Avenue Off-Ramp	3+Aux		AM	Weave	B	Weave	B	Weave	A	Weave	A
			PM	Weave	A	Weave	A	Weave	A	Weave	A
McHenry Avenue On-Ramp	3	Merge	AM	16	B	16	B	15	B	15	B
			PM	14	B	14	B	13	B	13	B
McHenry Avenue to Tully Road	3	Multilane	AM	17	B	17	B	16	B	16	B
			PM	14	B	14	B	13	B	13	B
Tully Road to Carver Road	3		AM	14	B	14	B	13	B	13	B
			PM	14	B	14	B	13	B	13	B

Notes:
1. Multilane = HCM Multilane Highways Analysis; Basic = HCM Basic Freeway Analysis; Merge = HCM Merge Analysis; Diverge = HCM Diverge Analysis; Weave = Leisch Method
2. Density is in passenger cars per mile per lane
Source: Fehr & Peers, 2015

5. ALTERNATIVES

The proposed project identified four Build Alternatives (1A, 1B, 2A, and 2B) and the No-Build Alternative (see **Figure 1-1** and **Attachment C** for Build Alternatives). The alternatives can be described in three primary segments as evaluated for environmental purposes. Segment 1 represents the more urbanized area; Segment 2 represents a transition from urbanized to rural area; and Segment 3 represents the rural foothill area. Segment 1, which has the same western terminus for all Build Alternatives, begins at the SR 219 (Kiernan Avenue)/Tully Road intersections. All of the Build Alternatives proceed along the same alignment and have similar improvements to the vicinity of the existing Claus Road/Claribel Road intersection near southeast portion of the City of Riverbank/northeast portion of the City of Modesto future sphere of influence. In Segment 2, the four similar alternatives separate into two different alignments (1A/1B and 2A/2B). In Segment 2, Alternatives 1A and 1B veer northeast from near the existing Claus Road/Claribel Road intersection and pass through the southern boundary of the City of Oakdale to just east of Albers Road, and Alternatives 2A and 2B continue to extend easterly along Claribel Road and veer northeastward past the intersection of Claribel Road/Bentley Road to just east of Albers Road. Each of the alternatives then continues to the respective proposed eastern terminus (A and B). In Segment 3, Alternatives 1A and 2A merge as similar alternatives at the southern end of the City of Oakdale and continue on the same alignment to the proposed eastern terminus (A) at the new SR 108/SR 120 intersection just east of the City of Oakdale boundary. In Segment 3, Alternatives 1B and 2B merge as similar alternatives north of the existing Warnerville Road/Emery Road intersection and continue on a northeasterly direction to the proposed other eastern terminus (B) at the new SR 108/SR 120 intersection west of the existing SR 120/Lancaster Road intersection. Each of the alternative's similar features and unique features are described in the following paragraphs.

5A. Viable Alternatives

No-Build Alternative

Under the No-Build Alternative, SR 108 would remain in its existing condition and no improvements would be made. The No-Build Alternative also includes all future planned transportation network improvements in the study area as discussed under TSM/TDM alternatives. The No-Build Alternative would result in continued deterioration of roadway level of service, increased traffic congestion, reductions in the ability to move goods and services, no improvements in traffic operations, and increased impacts to air quality and noise in the surrounding communities. The No-Build Alternative does not meet project purpose and need.

No environmental impacts other than ongoing impacts associated with the existing alignment would occur with the No-Build Alternative. No safety or operational plans are being considered for this project other than those proposed in this document.

The No-Build Alternative provides decision makers with a baseline for evaluating and considering the relative magnitude of impacts from the Build Alternatives. The No-Build Alternative may be selected if other alternatives have substantial impacts on the environment, do not serve the stated purpose and need, or are not economically feasible. Selection of the No-Build Alternative would not preclude future maintenance work of future highway projects within the project area.

Build Alternatives

As part of the screening process, equal levels of detail were used to identify and evaluate four Build Alternatives, 1A, 1B, 2A and 2B, in the environmental document and associated engineering studies. All four alternatives reduce average daily traffic volumes and current traffic congestion, support the efficient movement of goods and services throughout the region, and improve the efficiency of interregional travel by reducing travel times for SR 108 in concurrence with the project purpose and need.

After review of public comments, the Project Development Team met on February 5, 2018 to discuss the proposed project alternatives. During the meeting, the four build alternatives in the environmental document (Alternatives 1A, 1B, 2A, and 2B) were discussed relative to any issues raised by the public during the public review period and the local agencies' input on the locally preferred alternative. It was then determined that Alternative 1B was the alternative preferred by the public, associated local agencies, and Caltrans.

As a result, The PDT recommended Alternative 1B as the Preferred Alternative for the following reasons:

- Alternative 1B meets the purpose and need of the project.
- Alternative 1B has fewer adverse impacts to homes and businesses in the area.
- Alternative 1B maximizes traffic operations compared to Alternatives 2A or 2B.
- Alternative 1B is closest to the urbanized areas and planned growth areas in the region.
- The local jurisdictions (City of Modesto, City of Oakdale, City of Riverbank, and Stanislaus County) unanimously support the selection of Alternative 1B as the locally preferred alternative.

The common and separate engineering features and impacts are described below per the sections as follows:

- Common for Alternatives 1A, 1B, 2A, and 2B within Segment 1;
- Common for Alternatives 1A and 1B within Segment 2;
- Common for Alternatives 2A and 2B within Segment 2;
- Common and Separate for Alternatives 1A and 2A within Segment 3;
- Common and Separate for Alternatives 1B and 2B within Segment 3.

Proposed Engineering Features

Common Engineering Features of All Build Alternatives (1A, 1B, 2A, 2B) within the freeway/expressway Segment 1 [Proposed Modified SR 219 (Kiernan Avenue)/Tully Road Intersection to Proposed SR 108/Claus Road Intersection]

The four Build Alternatives are shown in **Figure 1-1** and **Attachment C**. The western terminus of all alternatives is at the proposed modified signalized SR 219 (Kiernan Avenue)/Tully Road intersection. The alternatives proceed on the same new alignment for approximately 1 mile to SR 108 (McHenry Avenue) as SR 219 multi-lane expressway, transitioning from the SR 219 conventional highway to the west to the SR 108 freeway to the east. The new aligned roadway continues for all alternatives for approximately four miles as SR 108 multi-lane freeway/expressway and has similar impacts to the vicinity of the proposed signalized SR 108/Claus Road intersection, which is near the southeast portion of Riverbank. The proposed signalized SR 108/Claus Road intersection provides a transition between the SR 108 freeway to the west and the urban/rural expressway in Segment 2 east of Claus Road. In addition to the intersections at each end of Segment 1 within the urban freeway segment, four single point interchanges (IC), each with two on-ramps and two off-ramps, are proposed at the realigned SR 219/SR 108 (McHenry Avenue)/SR 108 Freeway Separation, SR 108/Coffee Road Undercrossing, SR 108/Oakdale Road Undercrossing, and at the SR 108/Roselle Avenue Undercrossing. No private driveways are proposed along this segment of new roadway; therefore, in order to maintain access to the new facility via the proposed four interchanges and two intersections from adjacent parcels, new and realigned local access roads will be included as part of the proposed project. Bike and pedestrian access is planned to be prohibited within this segment of new roadway as the local roadway network has sufficient existing and planned bike and pedestrian facilities, including but not limited to, along Kiernan Avenue, Claribel Road and canals. Bikes and pedestrians would be accommodated through the proposed interchanges and ramp intersections along the local crossing roads. Furthermore, three separate locations are proposed for separated-grade structures at SR108/MID Lateral #6 Canal Undercrossing, SR 108/MID Main Canal Undercrossing and SR 108/BNSF Railroad/Terminal Avenue Overhead. Proposed local access roads and separated-grade structures are shown in **Attachment C** and **Attachment D**.

Common Engineering Features of Build Alternatives (1A and 1B) within the expressway Segment 2 [Proposed SR 108/Claus Road Intersection to 0.2 Mile East of Proposed SR 108/Albers Road Intersection]

The two Build Alternatives 1A and 1B continue along SR 108 expressway on the same alignment and have similar impacts from the intersection at Claus Road to 0.2 mile east of Albers Road south of the City of Oakdale. Segment 2, approximately 5.5 miles of multi-lane expressway facility, is proposed to transition the urban freeway Segment 1 facility to the rural Segment 3 facility via an urban/rural multi-lane expressway. This segment provides access via SR 108/Crane Road intersection as well as SR 108/Claus Road at the western end and SR 108/Albers Road at the eastern end. The Segment 2 expressway is proposed to have no private driveway access within the segment limits. Access to the facility for adjacent parcels would be provided at the intersections via modified and new local roadways. Furthermore, four separated-grade overcrossings at SR 108/McGee Avenue-Eleanor Avenue, SR 108/Langworth Road, SR 108/Patterson Road, and SR 108/Kaufman Avenue are proposed to provide access across the new facility as well as provide access to public roads that have intersections with the facility. Pedestrians are planned to be prohibited from this segment of new roadway as there would be minimal pedestrian volumes in this more rural segment and there are other existing and planned local roads to accommodate pedestrian movements. However, pedestrians would be accommodated through the intersections and the local road crossings. This segment would be accessible to bikes along its length and through the intersections along local road crossings.

Common Engineering Features of Build Alternatives (2A and 2B) within the expressway Segment 2 [Proposed SR 108/Claus Road Intersection to near Proposed SR 108/Oakdale-Waterford Highway Local Road Intersection]

The two Build Alternatives 2A and 2B continue along SR 108 expressway on the same alignment and have similar impacts from the intersection at Claus Road to 0.2 mile east of Albers Road south of the City of Oakdale near Oakdale-Waterford Highway local roadway. The Segment 2, approximately 5.4 miles of multi-lane expressway facility, is proposed to transition the urban freeway Segment 1 facility to the rural Segment 3 facility via an urban/rural multi-lane expressway and provides access via SR 108/Bentley Road intersection as well as SR 108/Claus Road at the western end and SR 108/Albers Road at the eastern end. The Segment 2 expressway is proposed to have no private driveway access within the segment limits. Access to the facility for adjacent parcels would be provided at the intersections via modified and new local roadways. Furthermore, three separated-grade overcrossings at SR 108/McGee Avenue-Eleanor Avenue, SR 108/Langworth Road, and SR 108/Oakdale-Waterford Highway, local roads are proposed to provide access across the new facility as well as provide access to public roads that have intersections with the facility. Pedestrians are planned to be prohibited from this segment of new roadway as there would be minimal pedestrian volumes in this more rural segment and there are other

existing and planned local roads to accommodate pedestrian movements. However, pedestrians would be accommodated through the intersections and the local road crossings. This segment would be accessible to bikes along its length and through the intersections along local road crossings.

Common and Separate Engineering Features of Build Alternatives (1A and 2A) within the expressway Segment 3 [0.2 Mile East of Proposed SR 108/Albers Road Intersection to Proposed SR 108/SR 120 Intersection/Junction at "A" Eastern Terminus]

The two Build Alternatives 1A and 2A continue north northeasterly along SR 108 multi-lane expressway for approximately 1.6 miles on different alignments with different impacts from 0.2 mile east of SR 108/Albers Road intersection to 0.3 mile north of proposed SR 108/Warnerville Road Undercrossing and for approximately 2.3 miles on the same alignment and have similar impacts from approximately 0.3 mile north of proposed SR 108/Warnerville Road Undercrossing to the proposed SR 108/SR 120 intersection at the "A" eastern terminus. The Segment 3 rural multi-lane expressway facility is proposed to connect Segment 2 east of SR 108/Albers Road intersection to SR 108/SR 120 intersection at the proposed "A" eastern terminus approximately 0.6 mile east of SR 120/South Stearns Road intersection and provides one proposed access point at SR 108/Stearns Road Extension intersection. The Segment 3 expressway is proposed to have no private driveway access within the segment limits. Access to the facility for adjacent parcels would be provided to the intersections via modified and new local roadways. Furthermore, there is one distinct separated-grade structure, within the different alignment portion of each alternative, at SR 108/Warnerville Road Undercrossing and two common separated-grade structures at SR 108/Sierra Railroad Overhead/Sierra Road Overcrossing and SR 108/South Stearns Road Undercrossing which are proposed to provide access across the new facility as well as provide access to public roads that have intersections with the facility. Pedestrians are planned to be prohibited from this segment of new roadway as there would be minimal pedestrian volumes in this more rural segment and there are other existing and planned local roads to accommodate pedestrian movements. However, pedestrians would be accommodated through the intersections and the local road crossings. This segment would be accessible to bikes along its length and through the intersections along local road crossings.

Common and Separate Engineering Features of Build Alternatives (1B and 2B) within the expressway Segment 3 [0.2 Mile East of Proposed SR 108/Albers Road Intersection to Proposed SR 108/SR 120 Intersection/Junction at "B" Eastern Terminus]

The two Build Alternatives 1B and 2B continue north northeasterly along SR 108 multi-lane expressway for approximately 3.7 miles on different alignments with different impacts from 0.2 mile east of SR 108/Albers Road intersection to 1.0 mile southwest of proposed

SR 108/Fogarty Road Overcrossing and for approximately 3.3 miles on the same alignment and have similar impacts from approximately 1.0 mile southwest of proposed SR 108/Fogarty Road Overcrossing to the proposed SR 108/SR 120 intersection at the "B" eastern terminus. The Segment 3 rural multi-lane expressway facility is proposed to connect Segment 2 east of SR 108/Albers Road intersection to SR 108/SR 120 intersection at the proposed "B" eastern terminus approximately 0.6 mile west of SR 120/Lancaster Road intersection and provides two proposed access points at SR 108/South Stearns Road (Alternative 1B), SR 108/Smith Road (Alternative 2B) and SR 108/Stearns Road Extension intersection (common to both alternatives). The Segment 3 expressway is proposed to have no private driveway access within the segment limits. Access to the facility for adjacent parcels would be provided to the intersections via modified and new local roadways. Within the different alignment portion of each alternative, separated-grade structures are proposed at SR 108/Warnerville Road Undercrossing and two various Oakdale Irrigation District (OID) canal crossings. Three common separated-grade structures at SR 108/OID South Main Canal, SR 108/Fogarty Road Overcrossing and SR 108/Sierra Railroad Overhead. These structures are proposed to provide access across the new facility as well as provide access to public roads that have intersections with the facility. Pedestrians are planned to be prohibited from this segment of new roadway as there would be minimal pedestrian volumes in this more rural segment and there are other existing and planned local roads to accommodate pedestrian movements. However, pedestrians would be accommodated through the intersections and the local road crossings. This segment would be accessible to bikes along its length and through the intersections along local road crossings.

The following specific feature descriptions summarize the improvements/facilities proposed with the alternatives:

Roadway Corridor

A minimum 244-foot wide right-of-way with two to three 12-foot wide through lanes with 5-foot to 10-foot wide left and 10-foot wide right shoulders in each direction of the roadway. The east-bound and west-bound alignments will be separated by a 46 to 70-foot wide median, including the 5-foot to 10-foot wide left shoulders and 26-foot to 60-foot wide graded unpaved median area. Drainage swales will be located along the side of the NCC. From Claus Road to the NCC terminus at proposed SR 108/SR 120 intersection, the expressway could accommodate a shared Class III bike route within the proposed shoulders of NCC. Furthermore, NCC would not preclude other bike facilities from being considered that are consistent with the regional bikeway projects in the StanCOG Non-Motorized Transportation Master Plan.

Local Access Roads

The proposed NCC alignment will be a freeway/expressway with controlled access providing ingress and egress at most cross road intersections, at a minimum of one mile

apart. This project will provide access to existing properties via a discontinuous local roadway system. Proposed local access road alignments and their relation to local streets are shown in **Attachment C**.

The local access roads will generally provide a 12-foot wide through lane and a 4-foot to 8-foot wide shoulder in each direction. Up to a 12-foot wide area will be provided between the right-of-way limit and the edge of pavement to allow for drainage ditches along the frontage roads/local roadways. Where required, left turn lanes and right turn lanes will be provided at connections to the cross roads.

Interchanges/Intersections

The proposed intersections along the project alignment will be signalized unless a roundabout is proposed. Maintenance vehicle pullouts and signal equipment areas are anticipated at various signalized intersections and along on-ramps and off-ramps.

The following interchange/intersection designs will be applied to the Preferred Alternative (Alternative 1B) within Segment 1:

Segment 1: Alternatives 1A, 1B, 2A, and 2B Interchanges/Intersections:

Existing Tully Road/SR 219 (Kiernan Avenue) intersection will consist of a modified signalized at-grade intersection. This intersection is the western terminus for the project and provides access to the conrolled access highway within Segment 1 east of SR 108 (McHenry Avenue).

SR 108 (McHenry Avenue)/SR 219 (Kiernan Avenue)/SR 108; Coffee Road/SR 108; Oakdale Road/SR 108; and Roselle Avenue/SR 108 will consist of proposed single point urban interchanges and separate-grade undercrossing structures. See **Figure 5-1** for an example of a typical proposed single point interchange for this project.

Claus Road/SR 108 signalized at-grade intersection will provide access from the SR 108 freeway to SR 108 expressway east of Claus Road as well as the local road access to City of Riverbank and future northeastern areas of City of Modesto.

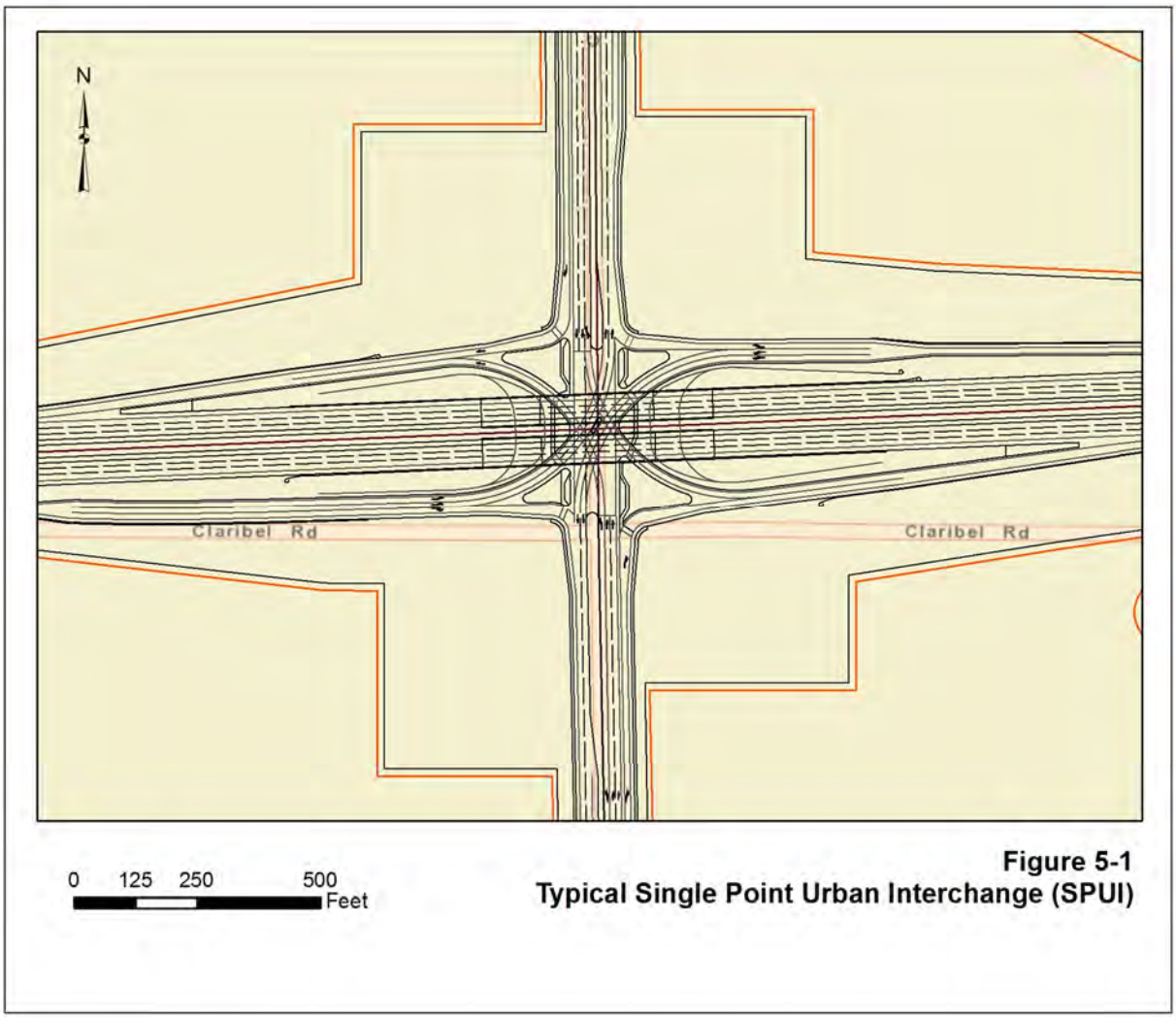


Figure 5-1
Typical Single Point Urban Interchange (SPUI)

Canal Crossings

Various canals exist within the project limits. These canals supply irrigation water throughout Stanislaus County. Most of the major canals are owned and maintained by Modesto Irrigation District (MID) and Oakdale Irrigation District (OID). Also, there are many private canals within the project limits. NCC will provide crossings over these canals as required by MID and OID or provide culverts to perpetuate the irrigation crossing either on existing alignment or on a relocated alignment to minimize or avoid longitudinal encroachments as much as possible. Most crossings will be at-grade via culverts and some will be via a separated-grade structure either in tandem with an adjacent local roadway or specifically for the canal crossing/maintenance access. **Attachment C** shows canal crossing locations within the project area. **Table 5-1** lists canal crossings common to all alternatives in Segment 1.

Table 5-1 Canal Crossings Common to Alternatives 1A, 1B, 2A and 2B

Roadway Facility	Canal Name	Location/Intersection	Type of Structure
Local Road	MID Lateral Number 6	Coffee Road south of Coffee Road/Claribel Road intersection	At-grade / Culvert
SR 108	MID Lateral Number 6	NCC between Coffee Road and Oakdale Road	At-grade / Culvert
Local Road	MID Lateral Number 6	Local access road between Coffee Road and Oakdale Road	At-grade / Culvert
Local Road	MID Lateral Number 6	Roselle Avenue north of Roselle Avenue/Claribel Road intersection	At-grade / Culvert
Local Road	MID Main	New Claribel Road between Roselle Avenue and Claus Road	Elevated / UC
Local Road	MID Main	NCC between Roselle Avenue and Claus Road	Elevated / UC
SR 108	MID Main	Claus Road south of Claus Road/Claribel Road intersection	At-grade / Culvert

Alternative 1A and 1B share canal crossings in Segment 2 (**Table 5-2**). Alternative 2A and 2B also share canal crossings in this segment (**Table 5-3**).

Table 5-2 Canal Crossings Common to Alternative 1A and 1B

Roadway Facility	Canal Name	Location/Intersection	Type of Structure
SR 108	OID Southwest Lateral	NCC south of NCC/Patterson Road overcrossing	At-grade / Culvert
SR 108	OID Riverbank Lateral	NCC south of NCC/Patterson Road overcrossing	At-grade / Culvert
Local Road	OID Riverbank Lateral	Patterson Road east of NCC/Patterson Road overcrossing	At-grade / Culvert
Local Road	OID Crane Drain	Crane Road north of NCC/Crane Road intersection	At-grade / Culvert
Local Road	OID Crane Drain	Local access road northeast of NCC/Crane Road intersection	At-grade / Culvert
SR 108	OID Riverbank Lateral	NCC between Crane Road and Kaufman Road	At-grade / Culvert
SR 108	OID Crane Drain	NCC southwest of NCC/Crane Road intersection	At-grade / Culvert

Table **5-3 Canal Crossings Common to Alternative 2A and 2B**

Roadway Facility	Canal Name	Location/Intersection	Type of Structure
Local Road	Private Irrigation Crossing	McGee Avenue south of NCC/McGee/Eleanor Avenue intersection	At-grade / Culvert
SR 108	OID Mootz Lateral	NCC between McGee/Eleanor Avenue and Langworth Road	At-grade / Culvert
Local Road	OID Mootz Lateral	Local Access road between McGee Avenue and Langworth Road	At-grade / Culvert
Local Road	OID Mootz Lateral	Local access road between Eleanor Avenue and Langworth Road	At-grade / Culvert
Local Road	OID Mootz Lateral	Local access road between McGee Avenue and Langworth Road	At-grade / Culvert
Local Road	OID Mootz Lateral	Langworth Road north of NCC/Langworth Road overcrossing	At-grade / Culvert
Local Road	OID Mootz Lateral	Local access road northeast of NCC/Langworth Road overcrossing	At-grade / Culvert
Local Road	OID Mootz Lateral	Bentley Road south of NCC/Bentley Road intersection	At-grade / Culvert
Local Road	OID Mootz Lateral	Local access road southwest of NCC/Bentley Road intersection	At-grade / Culvert
Local Road	OID Mootz Lateral	Local access road southeast of NCC/Bentley Road intersection	At-grade / Culvert
SR 108	OID Mootz Lateral	NCC west of Albers Road and between Bentley Road and Albers Road intersections with NCC	At-grade / Culvert
SR 108	OID Brichetto Lateral/Pipeline	NCC between Albers Road and Oakdale-Waterford Highway overcrossing	At-grade / Culvert
Local Road	OID Brichetto Lateral/Pipeline	Oakdale-Waterford Highway north of NCC at Oakdale-Waterford Highway overcrossing	Elevated / OC

Alternative 1A and 2A share canal crossings in Segment 3 (**Table 5-4**). Alternative 1B and 2B also have common canal crossings in this segment (**Table 5-5**).

Table 5-4 Canal Crossings Common to Alternative 1A and 2A

Roadway Facility	Canal Name	Location/Intersection	Type of Structure
SR 108	Claribel Lateral	NCC between Oakdale-Waterford Highway and Smith Road	At-grade/Culvert
Local Road	OID Riverbank Lateral	Local access road extension of Warnerville Road, west of NCC	At-grade / Culvert
SR 108	Private irrigation crossing	NCC south of NCC/SR 108/SR 120 intersection	At-grade / Culvert
SR 108	OID Crane Drain	NCC northwest of existing South Stearns Road/Warnerville Road intersection	Elevated / Undercrossing and At-grade / Culvert

Table 5-5 Canal Crossings Common to Alternative 1B and 2B

Roadway Facility	Canal Name	Location/Intersection	Type of Structure
SR 108	OID South Main	NCC west of existing South Stearns Road/Warnerville Road intersection	At-grade / Culvert
SR 108	OID South Main	NCC east of NCC/South Stearns Road intersection	At-grade / Culvert
Local Road	OID South Main	Local access road northeast of South Stearns Road/Warnerville Road intersection	At-grade / Culvert
SR 108	Kearny Lateral	NCC east of Smith Road near Warnerville Road	At-grade / Culvert
Local Road	OID South Main	Local access road extension south of existing Wamble Road/Fogarty Road intersection and north of NCC	At-grade / Culvert
SR 108	OID South Main	NCC between Warnerville Road and Fogarty Road	At-grade / Culvert
SR 108	Private irrigation crossing	NCC between Fogarty Road and Sierra Railroad	At-grade / Culvert
SR 108	Gray Lateral/Pipeline	NCC between Sierra Railroad and new NCC intersection south of SR 108/SR 120 intersection	At-grade / Culvert

Table 5-6 lists the canals that will be crossed by only Alternative 2B in Segment 3.

Table 5-6 Canal Crossings Only for Alternative 2B

Roadway Facility	Canal Name	Location/Intersection	Type of Structure
SR 108	OID South Lateral	NCC west of NCC/Smith Road intersection	At-grade / Culvert
SR 108	OID Heggie Pipeline	NCC east of NCC/Smith Road intersection and west of existing Stoddard Road alignment	At-grade / Culvert
SR 108	OID Union Drain	NCC east of NCC/Smith Road intersection and west of existing Stoddard Road alignment	At-grade / Culvert
SR 108	OID Stoddard Lateral	NCC east of existing Stoddard Road alignment	At-grade / Culvert
SR 108	Kearney Lateral	NCC north of Warnerville Road	At-grade / Culvert
SR 108	Kearney Lateral	NCC north of Warnerville Road	At-grade / Culvert

Railroad Crossings

In Segment 1, NCC will cross the Burlington Northern Santa Fe (BNSF) Railroad between Roselle Avenue and Claus Avenue using a separated-grade structure. The new Claribel Road and NCC will be elevated over the BNSF Railroad and Terminal Avenue with separate overhead structures. The BNSF Railroad and Terminal Avenue will remain at their current alignment.

The existing Union Pacific Railroad (UPRR) between Tully Road and SR 108 (McHenry Avenue) is an abandoned line crossing existing SR 219 (Kiernan Avenue). Tracks associated with this railroad line were removed as part of Caltrans' SR 219 (Kiernan Avenue) Widening Project that completed construction in October 2015.

NCC will cross the Sierra Railroad at approximately 1 mile north of Fogarty Road and approximately 0.5 mile southwest of the NCC/New Intersection south of SR 108/SR 120. At this railroad crossing, NCC will be elevated over the Sierra Railroad with an overhead structure along their current alignment.

Railroad Involvement

Based on project advanced planning studies, NCC will span the full railroad right-of-way and provide standard horizontal and vertical clearances to tracks. Railroad horizontal and vertical clearances are a requirement by BNSF and Sierra Railroad and will be verified during final design. Coordination with Caltrans District Railroad Liaison Agent will be completed during final design to verify the status of railroad involvement. Coordination

with the railroad companies, railroad operators and the California Public Utilities Commission (CPUC) will also occur during final design to determine the extent of the permits, applications and agreements required.

Hetch Hetchy Crossings

In Segment 1, NCC crosses Hetch Hetchy approximately 1,200-foot west of the NCC/Oakdale Road intersection, and Oakdale Road alignment crosses Hetch Hetchy approximately 500-foot north of the NCC/Oakdale Road intersection. The crossings are at-grade over the water pipeline and under the power transmission lines.

In Segment 2, NCC crosses Hetch Hetchy approximately 500-foot east of Langworth Road. The crossings are at-grade over the water pipeline and under the power transmission lines.

In Segment 3, NCC crosses Hetch Hetchy approximately 500-foot south of Warnerville Road. The crossings are at-grade over the water pipeline and under the power transmission lines.

Utility Relocation

Various utilities exist within the areas of potential construction including sewer, water, gas, overhead and underground electrical, overhead and underground telephone and communications, storm drains, irrigation canals, street lighting and signal equipment. All utility information within this report will be verified with each corresponding utility agency during the design phase. Further coordination is required with each owner to confirm the conflict and disposition strategy.

The following existing utilities will be verified within the project limits:

- Electric (overhead and underground) – Pacific Gas and Electric (PG&E)
- Electric (Hetch Hetchy overhead) – San Francisco Public Utilities Commission
- Electric (overhead) – Modesto Irrigation District (MID)
- Electric (overhead) – Turlock Irrigation District (TID)
- Gas – PG&E
- Telephone (overhead and underground) – AT&T
- Communication (overhead and underground) – Various Providers
- Water (Hetch Hetchy) - San Francisco Public Utilities Commission
- Water – City of Modesto
- Water – City of Riverbank
- Sanitary Sewer – City of Modesto
- Sanitary Sewer – City of Riverbank
- Irrigation – Modesto Irrigation District (MID)

- Irrigation – Oakdale Irrigation District (OID)
- Irrigation – Turlock Irrigation District (TID)

Further utility information can be found in the right-of-way data sheets and utility exhibits in **Attachment H**.

Utility Involvement

Utility involvement for the project includes the relocation of existing local public agency street lights and electrical conduit, overhead electric and telecommunication lines and pull boxes, underground electric, telephone, cable and vaults for various utility owners. Potholing will be required for potential utility conflicts with underground electric, gas, water, sewer, communication, irrigation and drain laterals. None of these relocations are anticipated to impact project lead time.

Responsibility for relocation of existing utilities that are within Caltrans and City right-of-way would follow State and Federal regulations and statues. The Preferred Alternative (Alternative 1B) would require relocation of existing utilities; however, relocation of the Hetch Hetchy power transmission lines and Hetch Hetchy underground water transmission lines is not anticipated.

Utilities, including main irrigation systems (MID and OID), would continue to be fully functional after construction of the project. Although construction of the project would not cause major outage of utilities, minor and temporary utility outages may occur during construction. All utility information within this report will be verified with each corresponding utility agency during the final design phase. A Determination of Liability would need to be prepared following the preparation of utility conflict plans. Utility relocations would take place before and during construction.

Non-Delegated and Delegated Nonstandard Design Features

Evaluation of the Preferred Alternative (Alternative 1B) determined that there is no proposed non-delegated nonstandard design features and one delegated nonstandard design feature identified along NCC mainline, ramps, overcrossings and adjacent local streets. The Design Standard Decision Document (DSDD) has been reviewed by the Project Development Coordinator and received concurrence from D10 Maintenance and Landscape Architect branch for the steeper than standard embankment side slopes. The DSDD is concurred with and was approved by the Office of Design on February 11, 2020.

Based on the Highway Design Manual Index 304.1, embankment slopes should be 4:1 or flatter. Proposed embankment slopes varying from to 2:1 (horizontal slope to vertical slope ratio) to greater than 4:1 will be required along portions of SR 108 mainline embankment

and for embankment side slopes at various interchanges/undercrossing structures and overcrossing structures. The justification for the nonstandard delegated design feature is primarily based on right-of-way impacts and added cost. The locations of the nonstandard slopes are as follows:

- Portions of proposed SR 219 expressway roadway section embankment outside side slopes between 0.5 mile west of and at the proposed SR 219/SR 108 Freeway/SR 108 (McHenry Avenue)/McHenry Avenue IC;
- Portions of proposed SR 108 freeway/expressway roadway section embankment outside side slopes between the proposed SR 219/ SR 108 Freeway/SR 108 (McHenry Avenue)/McHenry Avenue IC and near the proposed SR 108/Claus Road intersection;
- SR 108 expressway roadway section embankment outside side slopes between 0.1 mile east of the proposed Oakdale-Waterford highway local road undercrossing structure and near the proposed SR 108/SR 120 intersection;
- Portions of embankment side slopes on both sides of proposed single point IC ramps at the four proposed interchanges located at SR 219/SR 108 Freeway/SR 108 (McHenry Avenue)/McHenry Avenue IC, SR 108/Coffee Road IC, SR 108/Oakdale Road IC and SR 108/Roselle Avenue IC;
- Portions of embankment outside side slopes at various overcrossing structures for each alternative (within Segments 2 and 3 sections of proposed improvements).

Longitudinal Encroachment

There are no longitudinal encroachments for the Preferred Alternative (Alternative 1B). During the Draft Project Report phase, it was anticipated that a Longitudinal Encroachment Exception (LEE) may be required for the San Francisco Public Utilities Commission (SFPUC) Hetch Hetchy overhead power transmission lines and underground water pipelines. Through further review of the Preferred Alternative (Alternative 1B) Geometric Approval Drawing, it was determined that no LEE is required because the crossing angle between the Hetch Hetchy facilities and the Preferred Alternative does not exceed 30 degrees from normal.

High Occupancy Vehicle (HOV) Lanes/CHP Enforcement/Ramp Metering

Based on the Traffic Operations Analysis Report dated March 2015, HOV and ramp metering is not required for this project. Therefore, paved CHP enforcement areas are not needed; however, a graded area will be provided to facilitate ramp widening in the future.

Maintenance vehicle pullouts will be included per current guidelines at interchanges and other locations. Locations will be determined during final design.

Intelligent Transportation Systems/Transportation Management Systems (ITS/TMS)

Consistent with the District 10 Regional Concept of Transportation Operations (RCTO) and ITS Operational Improvement Plan, ITS/TMS elements are included as part of this project. Systems include changeable message sign, closed circuit television, traffic monitoring station, count stations, roadside weather information system, highway advisory radio, extinguishable message sign, and fiber optic system.

Future Technology

Caltrans is in the process of adapting roadways and updating standards to work with future technology such as autonomous vehicles. The most current Caltrans standards will be considered during final design.

Park and Ride Facilities

Park and ride use is encouraged in the Stanislaus County Regional Transportation Plan, and park-and-ride facilities are available for use in the region as needed. Opportunities for additional park-and-ride facilities will be considered in the Preferred Alternative (Alternative 1B), but taken alone would not meet project purpose and need.

Park-and-ride facilities are not proposed as part of this project. At final design phase, a multidisciplinary team from Caltrans and supported by StanCOG, Stanislaus County and cities of Modesto, Riverbank and Oakdale, and transit operators will determine how to expand the Park and Ride Program to better integrate these facilities into the State's transportation system. Significant considerations are located in respect to a State highway, the choice of lead agency, linkage to other transportation modes, and connection to transit oriented developments. Contacting Caltrans District Park and Ride Coordinator and regional planning liaison is recommended at the beginning of the final design phase.

Highway Planting

Per the Final Environmental Document (FED), replacement and new planting are required as mitigation for constructing the mostly elevated NCC freeway/expressway segment in the urban area between SR 108 (McHenry Avenue) and Claus Road. Planting should be used to blend in NCC with the surrounding area and help deter graffiti. This includes slope paving at bridge abutments, contrasting gore area treatment and vegetation control at Midwest guardrail system locations. Maintenance vehicle pullouts will be provided for electrical and landscape controller locations. All perimeter fencing will have a concrete mow strip. Participation with Caltrans, cities of Modesto, Riverbank and Oakdale, Stanislaus County and private residents would be required to achieve a uniform drought tolerant landscape plan that would help beautify and compliment the surrounding area as well as minimize water demand and maintenance resources. Erosion control is proposed

for most of the rural segments east of the SR 108/Claus Road signalized intersection (otherwise, keep and explain how roundabout locations are treated in a separate sentence here). Removal of existing plant material will be avoided where feasible and minimized elsewhere. The approved Visual Impact Assessment provides measures to mitigate any adverse visual impacts associated with the construction of the proposed project on the surrounding visual environment. Landscape type maintenance requirements will be determined at final design phase in cooperation between Caltrans, Stanislaus County, and cities of Modesto, Riverbank and Oakdale.

Erosion Control/Storm Water Pollution Control

Erosion control treatment will be applied to any area of soil disturbance that will remain exposed to the elements and will not be receiving paving. Procedures for applying temporary erosion control treatments will be done in accordance with an approved Storm Water Data Report (SWDR) and project specific Storm Water Pollution Prevention Plan (SWPPP) to meet water quality discharge requirements. Permanent erosion control (post construction) will also be employed.

Drainage and Hydraulics

The following summary is from the Preliminary Drainage Report (PDR) that has been completed for this project. The project area consists primarily of agricultural land use with a minor amount of industrial development near the westerly project limits. The site receives approximately 13.5-inches of rainfall a year on average and is underlain primarily by Group C and D soils, poor draining soils, with a high runoff potential. The majority of on-site runoff is proposed to flow into vegetated ditches/shallow swales and infiltrates into the ground or evaporates into the air. The offsite discharge would be perpetuated through the project limits and conveyed downstream through cross culverts. The entire project area is outside the 500-year floodplain.

Drainage improvements associated with the project include roadside ditches, retention basins, and cross culverts. Additional improvements anticipated to be delineated during final design include median and/or shoulder inlets, storm drain pipes, down drains, asphalt concrete overside drains, and bridge deck drain systems where needed.

Hydrologic and hydraulic analyses were performed to determine preliminary sizes for the following facilities:

Roadside Ditches: Roadside ditches will be used along the length of the roadway corridor to collect and convey on-site runoff from the roadway and median. In general, mainline ditches will be unlined trapezoidal channels with an 8-foot bottom width and 4:1 (H: V)

side slopes; whereas Stanislaus County ditches will be unlined triangular channels with 4:1 side slopes. These ditches will convey storm runoff to nearby retention basins.

Cross Culverts: Cross culverts will be used under the main roadway corridor and under Stanislaus County roads where needed to perpetuate off-site drainage patterns. These culverts will be a minimum of 18-inches in diameter and composed of either reinforced concrete pipe (RCP) or corrugated steel pipe (CSP). For the purposes of this report, culvert sizes were approximated based on representative off-site watersheds.

Retention Basins: Retention basins will be used to contain on-site runoff within Caltrans and Stanislaus County right-of-way. Where space permits, basins will be located in one or more quadrants of interchanges and intersections. Where space is constrained due to right-of-way or topography, basins will be located longitudinally alongside the roadway, taking the place of the roadside ditches.

Based on the results of the drainage analysis, the proposed drainage facilities within the local right-of-way have been designed to provide adequate storage and sufficient capacity for storm water. Stanislaus County concurs with the results of this analysis.

Spread width, inlet efficiency, storm drain calculations, and site-specific culvert sizing will be performed as part of final design.

Noise Barriers

The Noise Study Report (NSR) for this project was prepared and approved by Caltrans in February 2017. An addendum to the NSR was completed in October 2019. The Noise Abatement Decision Report (NADR) was approved by Caltrans in February 2017. No addendum to the NADR was needed because the results of the NSR stayed consistent in 2019. The proposed project includes noise barriers, also referred to as sound walls (SW), as part of the improvements. The barriers will be at two locations, Olive Lane Trailer Park along Claus Road and Claus Road near Plainview Road. There was no opposition to the proposed noise barriers during the public comment period in 2019.

Non-motorized and Pedestrian Features

The project does provide for pedestrian and bicycle use as described under Section 6, “Considerations Requiring Discussion, 6H. Complete Streets and Climate Change” of this report.

Cost Estimates

The summary of the current estimated capital cost for the Build Alternatives, not including project development support costs, is as follows:

Table 5-8: Total Project Cost Summary

	Alternative			
Cost Component	**1A**	**1B (Preferred)**	**2A**	**2B**
Roadway	$266 million	$297 million	$267 million	$300 million
Structures	$116 million	$115 million	$124 million	$138 million
Right-of-Way	$287 million	$268 million	$294 million	$270 million
Total Capital Cost	**$669 million**	**$680 million**	**$685 million**	**$708 million**

Cost estimate for the Preferred Alternative (Alternative 1B) is included in **Attachment F**.

Right-of-Way Data

Additional right-of-way acquisition would be required to accommodate the project and involves agricultural, residential, industrial and commercial parcels.

Additionally, public utility easements will be required.

Compensation may be required for the loss of habitat for California Tiger Salamander, Vernal Pool Invertebrates, and Swainson's Hawk. Compensation may also be required for the loss of farmland, oak woodland and wetlands. Potential mitigation cost estimates are included in the right-of-way cost. See Right-of-Way Data Sheets in **Attachment H**.

Transportation System Management and Transportation Demand Management Alternatives

Transportation Systems Management (TSM) and Transportation Demand Management (TDM) strategies would increase the efficiency of existing roadway facilities and increase the number of vehicle trips a facility can carry without increasing the number of through lanes.

Although TSM/TDM measures alone could not satisfy the purpose and need of the project, the following TSM/TDM Alternatives were proposed and evaluated for the project:

> *TSM/TDM Alternative 1:* Implementation of Land Use Strategies. Land use strategies have already been planned and implemented through the existing general plans of the affected cities of Modesto, Riverbank, and Oakdale as well as Stanislaus County. This project would implement previously planned transportation improvements. Construction would be consistent with planned land use strategies. The proposed project is consistent with the implemented land use designations.
>
> *TSM/TDM Alternative 2:* Use of Existing or Improved Transit System. Transit system improvements have been implemented to the extent feasible by the

following local transit authorities: Stanislaus Regional Transit operated by Stanislaus County, Modesto Area Express operated by the City of Modesto, and Riverbank-Oakdale Transit Authority operated by the cities of Riverbank and Oakdale.

Use of the existing transit system or implementation of a system-wide improved transit system would not meet community needs or existing and projected population and transportation demands. The proposed project would contribute to the improvement operation of existing network system. Opportunities for additional transit systems would be considered in the Preferred Alternative (Alternative 1B) but taken alone would not meet project purpose and need.

TSM/TDM Alternative 3: Intersection and Signal Improvements. These improvements are currently being addressed by a number of existing and proposed roadway improvements under the respective cities' and Stanislaus County's capital improvement programs. These improvements on their own would not be sufficient to meet the project purpose and need because substantial additional area-wide intersection and traffic signal improvements beyond what is currently planned would be needed to improve regional circulation. Congestion and roadway capacity issues would still exist beyond the capability of the circulation system, even with additional intersection and signal improvements, due to existing and projected high traffic volumes in the region.

Intersections within the project area of Preferred Alternative (Alternative 1B):

- SR 219 (Kiernan Avenue)/Tully Road;
- SR 219/McHenry Avenue;
- Claribel Road/Coffee Road;
- Claribel Road/Oakdale Road;
- Claribel Road/Roselle Avenue;
- Claribel Road/Terminal Avenue; and,
- Claribel Road/Claus Road).

TSM/TDM Alternative 4: Existing Roadway System Improvements. These improvements are being addressed by a number of existing and proposed roadway improvements under the respective cities and Stanislaus County's capital improvement programs. As with intersection and traffic signal improvements, roadway system improvements would not be sufficient to meet the project purpose and need because substantial additional area-wide roadway segment improvements beyond what is currently planned would be needed to improve the regional circulation system. Congestion and roadway capacity issues would still exist

beyond the capability of the circulation system even with additional roadway segment improvements, due to existing and projected high traffic volumes in the region. To the extent possible, the proposed project will incorporate existing roadway system improvements into the project so as to not waste tax dollars previously spent on improvement projects.

TSM/TDM Alternative 5: Use of Carpools, Vanpools, Train, Bus, Bicycle, and Walking. Policies related to vanpools, train, bus, bicycle, and walking are in place in the respective cities' and Stanislaus County's general plans. These policies have been adopted as goals in each of the communities but taken alone would not meet the project purpose and need to fully reduce existing and future congestion. These uses would be improved by the proposed project. No substantial reduction in vehicle traffic would occur with the modes listed below:

> *Carpools and Vanpools:* Use of carpools and vanpools is identified in Stanislaus County's 2011 Regional Transportation Plan as well as in each of the cities' general plans.
>
> *Train:* Amtrak provides passenger rail service in the area. The passenger rail line runs north-south along Santa Fe Avenue, Terminal Avenue, and Santa Fe Road. At-grade crossings are provided at the following roadway segments: SR 132, Claus Road, Claribel Road, Patterson Road, and River Road. An Amtrak commuter station is located in the City of Modesto near the Briggsmore Avenue and Santa Fe Avenue intersection. Transit access to and from the station is provided by the Modesto Area Express.
>
> *Bicycle and Walking:* Bicycle facilities are provided throughout the study area. The pedestrian network in the study area will consist of sidewalks along most of the streets and crosswalks at major intersections. While sidewalks are provided on many of the roadways in the developed areas of the cities of Modesto, Riverbank, and Oakdale, most roadways in the unincorporated areas of Stanislaus County do not have pedestrian facilities. Since the project will be located within these unincorporated areas, the project will traverse roadways that currently do not provide sidewalks. Bicycle facilities will not be precluded from being considered that are consistent with the regional bikeway projects in the StanCOG Non-Motorized Transportation Master Plan.

TSM/TDM Alternative 6: Compressed Work Hours/Telecommuting. The respective cities and Stanislaus County's general plans have recommended additional policies related to this alternative. These policies have been adopted as goals for the respective communities and have been implemented to the extent feasible but taken

alone would not meet project purpose and need. The project would contribute to compressed work hours due to lessening commute times through increasing traffic capacity and efficiency.

TSM/TDM Alternative 7: Increased Park and Ride Use. Park and ride use is encouraged in the Stanislaus County Regional Transportation Plan, and park and ride facilities are available for use in the region as needed. Opportunities for additional park and ride facilities will be considered in the Preferred Alternative (Alternative 1B) but taken alone would not meet project purpose and need.

Although TSM/TDM measures alone would not satisfy the purpose and need of the project, TSM/TDM alternatives were evaluated, and to the extent feasible have been incorporated into the Preferred Alternative (Alternative 1B) for the project. For example, land use strategies and policies related to the use of alternative means of transportation (TSM/TDM Alternative 1, 5, 6, and 7) have been implemented to the extent feasible though inclusion of TSM/TDM measures in the general plans of the respective communities. Signal and intersection improvements and roadway improvements (TSM/TDM Alternative 3 and 4) have been completed based on the respective jurisdictions' capital improvement programs. Use of the existing transit system and improvements thereto (TSM/TDM Alternative 2) were also implemented as feasible.

5B. Rejected Alternatives

The Build Alternatives studied in the DPR were developed to connect SR 219 near the City of Modesto to SR 120 near the City of Oakdale, reduce average daily traffic volumes and current traffic congestion, support the efficient movement of goods and services throughout the region, and improve the efficiency of interregional travel by reducing travel times for SR 108. The alternatives studied in the DPR that were rejected from further consideration include:

Alternative 1A

Segment 1 is common to all Build Alternatives. Alternative 1A begins at SR 219 (Kiernan Avenue)/Tully Road intersection, which is north of the City of Modesto between Kiernan Avenue/Carver Road intersection and SR 219/McHenry Avenue intersection. The alignment continues eastward along the existing SR 219 (Kiernan Avenue), which becomes Claribel Road east of existing SR 108/McHenry Avenue. Alternative 1A shifts to the south of Claribel Road east of Coffee Road and returns onto Claribel Road west of Claus Road.

In Segment 2, Alternative 1A is a multi-lane expressway facility about 5.5 miles long that would provide a transition between the urban Segment 1 and the rural Segment 3 facilities.

Alternative 1A veers northeast from the Claus Road intersection and crosses Langworth Road and Patterson Road while extending 3.2 miles northeast at an approximately 45-degree angle. Past the Lexington Road and Crane Road intersection, Alternative 1A overlies the existing Lexington Road and extends easterly to Albers Road. From Albers Road, Alternative 1A turns north crossing Warnerville Road.

In Segment 3, Alternative 1A is a rural multi-lane expressway facility and begins near Warnerville Road west of South Stearns Road and the Sierra Railroad. Alternative 1A runs northward, parallel to South Stearns Road, before crossing over the Sierra Railroad west of the South Stearns Road and Sierra Road intersection. It curves eastward until it ultimately ends at the intersection with SR 120, about 0.6 mile east of the SR 108/SR 120/South Stearns Road intersection.

Alternative 2A

Improvements for Alternative 2A in Segment 1 are identical to those listed in Alternative 1A, Segment 1 above.

Segment 2 is a multi-lane expressway facility about 5.4 miles long and would transition between the urban Segment 1 and the rural Segment 3 facilities. Alternative 2A continues east mostly along the existing Claribel Road alignment. Just east of the Bentley Road/Claribel Road intersection, Alternative 2A veers northeast and crosses Oakdale-Waterford Highway.

In Segment 3, after crossing the Oakdale/Waterford Highway, Alternative 2A curves northeast as it crosses the Claribel Lateral Canal, then continues northward toward the direction of South Stearns Road and the Sierra Railroad. It ends at the intersection with SR 108/SR 120, approximately 0.6 mile east of the SR 108/SR 120/South Stearns Road intersection.

Alternative 2B

Improvements for Alternative 2B in Segment 1 are identical to those listed in Alternative 1A, Segment 1 above.

Improvements for Alternative 2B in Segment 2 are identical to those listed in Alternative 2A, Segment 2 above.

In Segment 3, Alternative 2B continues northeast for 3.3 miles, and then crosses the Sierra Railroad with a separated-grade structure before turning northward toward Fogarty Road and its SR 108/SR 120 end, 1.5 miles east of the SR 108/SR 120/Wamble Road intersection.

Initial Alternatives Considered but Eliminated From Further Discussion

A total of 18 initial alternatives were considered during the alternatives screening process based on wide-ranging public input and Project Development Team recommendations. The TSM/TDM alternatives are not included as they could not be implemented as standalone alternatives, but could be incorporated into the planned design as a combination of factors and project objectives. The initial 18 Build Alternatives are illustrated in **Figure 5-2** and were evaluated based on procedures and criteria outlined in Caltrans Project Development Procedures Manual, as amended. Seven broad-based criteria of the Project Development Procedures Manual were used to screen the initial Build Alternatives because this guidance provides the framework of policies and procedures for California State Highway Improvement projects. These criteria include the following questions:

- Purpose and need: Would the alternative meet the project's purpose and need
- Excessive project cost: Would the alternative result in a substantially higher overall cost
- Relocations and acreage: Would the alternative require excessive removal of businesses, residences, or urban or rural acreage
- Operational or safety problems: Would the alternative result in operational or safety problems
- Adverse social, economic, or environmental impacts: Would the alternative disrupt or divide an established community or result in economic or social impacts
- Cumulative impacts: Would cumulative impacts result due to relocations, operational or safety problems, or social, economic, and environmental impacts
- Rejected at an earlier stage: Was the alternative rejected at an earlier stage of project development

This summarizes the FED section on alternatives considered but eliminated from further discussion. The FED provides additional detailed discussion. Based on the above criteria, ten alternatives were eliminated from consideration for not meeting the criteria listed above, and eight alternatives remained for further evaluation. The eight Build Alternatives that moved forward have been revised and combined into the four Build Alternatives which are being taken through the environmental process. These four Build Alternatives have similar connection points with SR 108/SR 120 as previously considered during the alternative screening process. Through progression of alternative refinement throughout the environmental process, alternatives were further screened through a series of PDT meetings and input solicited from public agencies with emphases on the following screening criteria:

- Farmlands (including prime agricultural soils and Williamson Act lands);
- Air quality and noise;

- Wetlands and hydric soils;
- Special Status, threatened, and endangered species;
- Archaeological, historical, or paleontological sites;
- Number of canal, railroad, or utility crossings;
- Emergency response times;
- Geology, soils, and seismicity;
- Flood hazard zones or floodplains;
- Parcels and buildings affected; including the number of relocations;
- Social or economic impacts;
- Visual impacts;
- Engineering feasibility;
- Conflict with transportation or land use plans; and,
- Local government support for a new route.

Through this process, the project limits have been reduced to develop the four primary Alternatives with two potential ending termini for each alignment. The four Build Alternatives alignments begin west of Tully Road/SR 219 intersection and terminate along SR 108/SR 120, east of the City of Oakdale.

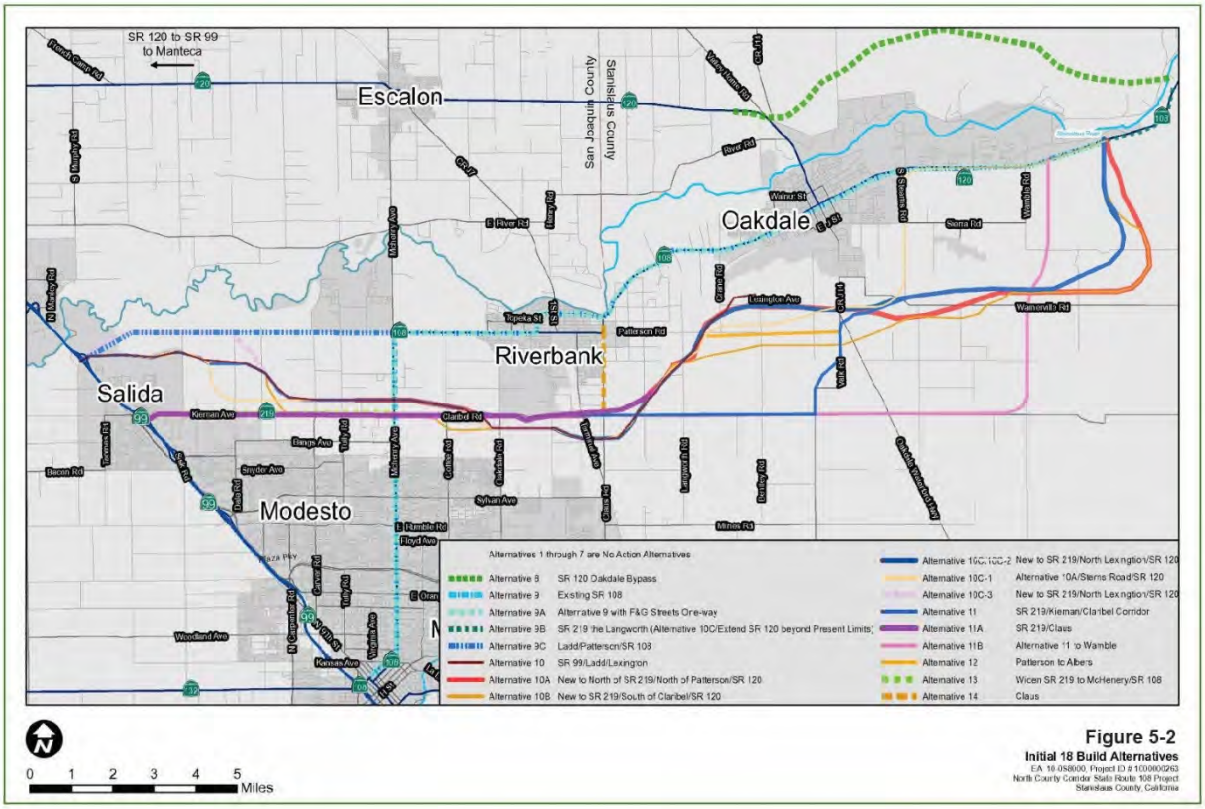


Figure 5-2
Initial 18 Build Alternatives
EA 10-0S800, Project ID # 1000000263
North County Corridor State Route 108 Project
Stanislaus County, California

6. CONSIDERATIONS REQUIRING DISCUSSION

6A. Hazardous Waste

An Initial Site Assessment (ISA) was conducted for the proposed project (Crawford & Associates, Inc., 2015). The assessment was conducted to determine the potential for contaminated properties within the project boundaries that may affect selection of Preferred Alternative (Alternative 1B), right-of-way property acquisition, and construction of the proposed improvements and new roadways. Information for the assessment was obtained from regulatory database records, historical references, physical setting references, and on-site field reviews. Additional studies will be completed during the final design phase to determine the exact nature of the hazardous waste material and the appropriate methods of addressing the handling of hazardous waste material during construction of the proposed project.

The ISA identified two sites with potential "high risk" hazardous materials, including Riverbank Army Ammunition manufacturing plant, and Hawke Dusters, a crop dusting facility. The ISA also identified 82 sites with potential "medium risk" hazardous materials. A parcel specific Preliminary Site Investigation (PSI) maybe warranted to further evaluate the 'high risk' and select 'medium risk' sites with potential and documented areas of concern regarding hazardous materials within the NCC project area. Analytical testing, if necessary, will be completed during the PSI and may include heavy metals, petroleum hydrocarbons, chlorinated solvents, herbicides/pesticides, miscellaneous chemical waste and groundwater contamination.

Riverbank Army Ammunition: This parcel is currently a Federal Superfund Site and is undergoing remediation. Based on correspondence with the Army in January 2017, the Army awarded a construction contract to remediate the open field near the intersection of Claribel and Claus Roads, which is the area proposed to be impacted by NCC. The Army remediation effort should be completed prior to the construction of the NCC project and will attempt to mitigate the hazardous materials that may be located within the planned NCC improvements. Thus, any PSI at this time is not warranted. Army remediation efforts will determine the extent of hazardous waste impacts to the project. The southern portion of this site is impacted by the Preferred Alternative (Alternative 1B).

Hawke Dusters: This parcel is currently being used for agriculture; however, records search indicates the parcel has been historically used as a crop dusting facility and contained underground and aboveground storage tanks. This property is not being affected by the Preferred Alternative (Alternative 1B). However, if future phases of NCC impact this property, then a PSI including some sampling and testing should be completed to determine the vertical and lateral extent of potential contamination.

Medium Risk Sites: Prior to completion of 50% design, a PSI of all medium-risk sites identified having partial or total parcel impacts will be conducted. Depending on the impacts, the PSI may include a combination of owner interviews, additional site visits, and sampling and testing. Sampling and testing, if necessary, may include asbestos, heavy metals, petroleum hydrocarbons, chlorinated solvents, herbicides/pesticides, miscellaneous chemical waste, and groundwater contamination. Stanislaus County will acquire any parcel having groundwater contamination requiring mitigation and grant a surface easement to Caltrans in order to construct the project. Stanislaus County will own the underlying fee on the parcels and assume complete responsibility for any remaining contamination, absolving Caltrans of any responsibility for any remedial action. The Preferred Alternative (Alternative 1B) is affected by 64 medium risk sites.

6B. Value Analysis

In compliance with Federal requirements, a formal Value Analysis (VA) study was conducted by a multi-disciplinary team during September 8-12, 2014. The VA team identified 13 key VA alternatives that were considered to address the following functions: *Minimize Right-of-Way, Improve Traffic Operations, and Improve Constructability.*

Two VA alternatives were accepted consisting of VA Alternative 4 – use of back to back mechanically stabilized earth walls for high embankment areas and VA Alternative 8 – use of rubberized hot mix asphalt pavement for areas as deemed most viable per the life cycle cost analysis. The total potential reduction of initial cost was estimated at $5.93 million. These VA alternatives also offer the improvement of overall performance by as much as 38%, and up to 39% for value improvement, which relates overall performance to cost.

Seven VA alternatives were conditionally accepted consisting of VA Alternative 1 - consideration of semi-depressed local roadways at the four proposed grade separated interchange locations to reduce mainline profile and associated embankment costs, VA Alternative 3 – use of special design drainage trench in lieu of wide channels, VA Alternative 5 – steepen median side slopes to 4H:1V to minimize embankment within the elevated freeway section in Segment 1, VA Alternative 6 – consider use of continuous flow intersection design in lieu of triple left turn lanes at SR 108/Claus Road and SR 108/Albers Road, Alternative 10 – consideration of quick lime plus treated based material for SR 219 and SR 108 mainline pavement structural sections, VA Alternative 11 – Minimize right-of-way acquisition/footprint between Oakdale and SR 108/SR 120 intersection and VA Alternative 12 – consideration of FORTA-FI pavement additive to reduce pavement structural section depth and costs. Implementing these VA alternatives would maintain design intent, simplify construction, minimize right-of-way impacts, and reduce initial cost. The initial cost savings of the conditionally accepted VA alternatives were estimated at $7.3 million. These conditionally accepted VA alternatives will also offer performance improvements by 36% and value improvement by 54%. Maintenance was one of the key

evaluative performance criteria in determining impacts to future operations; however, subsequent costs were not developed for the analysis.VA accepted alternatives will be implemented at final design and VA conditionally accepted alternatives will be considered and evaluated during final design for potential implementation.

6C. Resource Conservation

The proposed project will result in decreased energy consumption. The improvements proposed will reduce future peak hour congestion and improve operations on existing SR 108 and other transportation network roads. These improvements will reduce energy consumption by providing more efficient traffic operations and improving fuel efficiency by reducing intersection delay. However, during the construction of the project it is anticipated that energy consumption will temporarily increase. There is no substantial wasteful use of energy anticipated.

The project proposes to improve the existing and construct a new freeway/expressway between the Tully Road/SR 219 (Kiernan Avenue) intersection and SR 108/SR 120 junction east of the City of Oakdale. The project was designed to maximize the existing roadway alignment along Claribel Road between Tully Road and Claus Road. During final design, special provisions may include recycling of existing asphalt concrete pavement for use in construction of the improvements proposed in this project.

Land use in the Primary Impact Area consists of urbanized developments, agricultural lands, and industrial areas. Significant resources of concern within the Primary Impact Area include wetlands, vernal pools, prime farmland, and potentially threatened/endangered species. Impacts to resources caused by project-related growth would be minimized through project design (such as limited traffic access points to NCC). Mitigation measures are identified in the FED and will be implemented to minimize potential impact on resources.

The proposed NCC project could accommodate a Class III bike route in each direction on roadway shoulders from Claus Road to the NCC eastern terminus at SR 108/SR 120. Pedestrian access including sidewalks and crosswalks would be provided along all crossroads in Segment 1 and at locations with existing pedestrian access in Segments 2 and 3. Encouraging use of non-motor vehicles reduces total trips and promotes more efficient future energy consumption to help conserve non-renewable resources.

The project would incorporate the use of energy-efficient lighting, such as light-emitting diode (LED) traffic signals. The LED bulbs themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the project’s CO2 emissions.

The proposed project will seek to locate staging areas within existing disturbed areas or areas within the proposed grading limits in order to minimize impacts to undisturbed areas outside the project limits.

In addition, the following "green" practices and materials would be used in the project as part of highway planting and erosion control work: compost and soil amendments derived from recycled wood products and green waste materials; fiber produced from recycled pulp such as newspaper, chipboard or cardboard; and wood mulch made from green waste and/or clean manufactured wood or natural wood.

6D. Right-of-Way Issues

The right-of-way cost for the Preferred Alternative (Alternative 1B) is estimated to be $268 million in current value. The Right-of-Way Data Sheet for the project is provided in **Attachment H**.

Right-of-Way Required

The right-of-way area and cost for this project includes public utility easements, areas for retention basins at intersections and longitudinal swales along the mainline and local roads as well as property required for the project. These basins and swales are consistent with the project drainage study and water quality requirements. See Right-of-Way Data Sheet (**Attachment H**) for parcels requiring relocation assistance or demolition/clearance, parcels with relocation displacements (single-family residences, multi-family residences and businesses) and parcels with demolition/clearance (including single-family, multi-family, commercial and industrial).

Relocation Impact Studies: A Relocation Impact Report was prepared for the proposed project (OPC(?), 2014). Property acquisitions would be required along the proposed corridor. While the displacement area is predominately agricultural, it encompasses a wide range of residential and commercial occupancy types including: Single Family Residences (SFR's), multiple family residences (MFR's), mobile homes, and commercial uses including industrial, commercial, retail, and farmland. Total acquisition by alternative is summarized in **Table 6-1**.

Table 6-1 Total Acquisition

	Alternative 1A	Alternative 1B (Preferred)	Alternative 2A	Alternative 2B
Permanent Acquisition				
Number of Full Acquisitions	70	64	81	73
Total Size of Full Acquisitions (sq. ft.)	16,056,172	12,770,110	19,716,323	15,960,626
Number of Partial Acquisitions	272	271	273	258
Total Size of Partial Acquisitions (sq. ft.)	35,936,773	46,427,341	31,426,409	38,837,955
Total Number of Parcels Impacted	342	335	354	331
Total Size of Parcels Impacted (sq. ft.)	51,992,945	59,197,451	52,142,732	54,798,581

*Data in this table is based on preliminary review of the right-of-way impacts for each design alternative. This data will be updated once a thorough analysis is conducted for the preparation of Caltrans right-of-way data sheets.
Source: OPC 2015

In general, the magnitude of the proposed project is considerable among all four Build Alternatives. Displaced residents and businesses would be relocated within the County. Relocation assistance payments and advisory assistance will be provided in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and as amended in 1987 (URA) and the project's Relocation Assistance Program (RAP).

6E. Environmental Issues

Caltrans is the California Environmental Quality Act (CEQA) Lead Agency and the National Environmental Policy Act (NEPA) Lead Agency for this project.

As owner-operator of the State Highway System (SHS), Caltrans is the CEQA Lead Agency for all improvements on the SHS. Under Chapter 3 of Title 23, United States Code, Section 327 (23 U.S.C. 327), Caltrans has NEPA Delegation. The Moving Ahead for Progress in the 21st Century Act (MAP-21) (P.L. 112-141) was signed into law on July 6, 2012, with an effective date of October 1, 2012.

MAP-21 creates a streamlined and performance-based surface transportation program, promotes accelerating project delivery and encourages innovation. Section 1313 of MAP-21 amends 23 U.S.C. 327 to establish a permanent Surface Transportation Project Delivery Program and allow any state to participate and for a state to renew its participation in the program. Previous to the passage of MAP-21, Caltrans was the only state in the nation to participate in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program), pursuant to Section 6005 of the Safe, Accountable, Flexible, and Efficient Transportation

Equity Act: A Legacy for Users act (SAFETEA-LU) beginning July 1, 2007 and ending September 30, 2012. Consequently, Caltrans continues to assume FHWA's responsibilities under NEPA as well as FHWA's consultation and coordination responsibilities under other Federal environmental laws for most highway projects in California. Accordingly, Caltrans is the Lead Agency under both CEQA and NEPA.

In compliance with CEQA, a Final Environmental Impact Report (EIR) has been prepared for this project in accordance with Caltrans environmental procedures and State environmental laws and regulations. In compliance with NEPA, a Final Environmental Impact Statement (EIS) has been prepared in accordance with federal laws and regulations.

Various environmental technical reports have been prepared to support the Final EIR and EIS. These studies include the following:

- Archaeological Survey Report (ASR)
- Historic Property Survey Report (HPSR)
- Historic Resources Evaluation Report (HRER)
- Air Quality Report (AQR)
- Relocation Impact Memorandum
- Noise Study Report (NSR)
- Paleontological Evaluation Report (PER)
- Noise Abatement Decision Report (NADR)
- Natural Environment Study (NES) and Addendum
- Community Impact Assessment (CIA) and Addendum
- Water Quality Assessment Report
- Visual Impact Assessment (VIA)

In addition, various engineering technical reports were prepared to support the FED including:

- Traffic Operations Analysis Report (TOAR)
- Bridge Advance Planning Study (APS)
- Preliminary Geotechnical Design/Materials Report (PGDR)
- Structures Preliminary Geotechnical Report (SPGR)
- Storm Water Data Report (SWDR)
- Preliminary Drainage Report (PDR)
- Hazardous Waste Initial Site Assessment (ISA)

The EIR discusses the proposed project's potential to impact the human, physical and biological environment. Specifically, the EIR analyzes land use and planning, agricultural resources, population and housing, recreation, public services, utilities and service systems, transportation/traffic, aesthetics, hydrology and water quality, geology and soils, mineral

resources, cultural resources, hazards and hazardous materials, air quality, noise, and biological resources. All potential impacts under CEQA associated with the project are addressed and avoidance, minimization and/or mitigation measures are discussed in the EIR. The EIR and the technical studies for the proposed project support the EIS under NEPA.

If the scope of work, including utility relocation requirements or project limits, change during the final design, and/or during the construction phase, an Environmental Re-Evaluation will be required to confirm the EIR and EIS environmental documentation for CEQA and NEPA remain appropriate and complete. An Environmental Certification will be required at the end of the final design phase, and Certificate of Compliance will be required following completion of construction of the project.

StanCOG's 2018 Regional Transportation Plan Sustainable Development Pattern goal is to provide a mix of land uses and compact development patterns; and direct development toward existing infrastructure, which will preserve agricultural land, open space, and natural resources. The RTP and the general plans of Stanislaus County and cities in the project area have also identified goals and policies that will promote sustainable development in the region and avoid growth-related effects. The project's influence on future development patterns and their effects on resources was evaluated and considered during alternative selection.

Biological Resources

Natural Communities: The Natural Environment Study (NES) prepared for this project identifies natural biological communities within the Biological Study Area (BSA); the vast majority of landmass is developed and agricultural lands, and areas of natural vegetation. The most common agricultural fields include row crops, alfalfa, rice fields, and grains. Orchards also occur throughout the Biological Study Area (BSA). A few small patches of annual grasses and weedy ruderal vegetation exist along roadsides, buildings, and dirt roads throughout the BSA. Impacts to interior live oak woodland range from 3.07 acres of direct impacts and 0.37 acre of indirect impacts with the proposed project. Impacts to blue oak savannah consist of 0.23 acre of direct impacts and 0.77 acre of indirect impacts.

Wetlands and Other Waters: The NES for the project included a jurisdictional delineation to identify potential Waters of United States (U.S.) and Waters of the State. For the purposes of the EIR/EIS, all waters mapped within the BSA are being considered jurisdictional. Potentially Jurisdictional Aquatic Resources in the BSA include seasonal wetland, perennial marsh, ditches, ponds, canals, and irrigated wetlands. The project will result in permanent and temporary impacts to wetlands, with all practicable measures to minimize harm to wetlands from proposed construction. The extent of waters of the State

impacted by the preferred alternative, if any, would be determined following verification of the Approved Jurisdictional Determination.

Plant Species: The BSA contains primarily dominated agricultural land uses, with several vegetation communities. No special status plant species were observed in the BSA. However, potentially suitable habitat for Succulent owl's clover, Hoover's spurge, Dwarf downingia, Legenere, Colusa grass, Hartweg's Golden Sunburst, Hairy orcutt grass, and Greene's tructoria were found in the BSA. Although potentially suitable habitat exists for these plants species within the seasonal wetlands in the BSA, due to lack of recent or nearby occurrences and the negative results from 2014 surveys, these species are presumed absent from the BSA. However, due to the below average rainfall during the winter of 2013-2014, these species may not have bloomed and is unable to be definitely eliminated from potentially occurring in the BSA. Impacts to vernal pool plant habitat (seasonal wetlands), as identified in the BSA, range from 0.07 ac of direct impacts and 2.22 ac of indirect impacts with the proposed project. Construction-related disturbance to annual grasslands would result in potential effects to suitable habitat for Hartweg's Golden Sunburst, if this species was present, totaling 3.28 ac of direct permanent effects and 0.57 ac of direct temporary effects in the project footprint and 11.73 ac of indirect effects in areas protected by ESA fencing and within 250-foot of the project footprint.

Animal Species: Several species face different impacts depending on the Build Alternative. Bats, the Western Burrowing Owl, Northern Harrier, White-tailed Kite, California Horned Lark, Loggerhead Shrike, California Tiger Salamander, Pacific Pond Turtle, Western Spadefoot Toad, migratory birds, vernal pool invertebrates, and the Valley Elderberry Longhorn Beetle all have suitable or potential habitat within the BSA. Depending on the Build Alternative, direct and indirect impacts have been calculated for the acreage affected for specific species. It is anticipated that adverse and potential impacts to these species will be avoided, minimized, or mitigated with permits, plans, and efforts to protect animal species.

- Preferred Alternative (Alternative 1B) Potential Impacts

  Potential impacts to bats include 19.78 acres to suitable tree habitat and 19.95 acres to suitable building habitat. Western Burrowing Owl habitat impacts would be approximately 31.45 acres, and Northern Harrier and California horned lark would face nesting impacts of 31.45, and 409.29 acres of foraging habitat area. The White-tailed Kite and Merlin impacts would include 409.29 acres to foraging habitat, and the Loggerhead Shrike would face 1 acre to nesting habitat, and 335.96 acres to foraging habitat. The Pacific Pond Turtle impacts would result in 0.86 acre to aquatic habitat, while the Western Spadefoot Toad would face direct impacts of 0.27 acre, and indirect impacts of 0.015 acre.

Threatened and Endangered Species: Several species face different impacts depending on the Build Alternative. The Swainson's Hawk, California Tiger Salamander, Vernal Pool Invertebrates, and Valley Elderberry Longhorn all have suitable or potential habitat within the BSA. Depending on the Build Alternative, direct and indirect impacts have been calculated for the acreage affected for specific species. It is anticipated that adverse and potential impacts to these species will be avoided, minimized, or mitigated with permits, plans, and efforts to protect animal species. Section 7 consultation with US Fish and Wildlife Services (USFWS) has been completed.

- Preferred Alternative (Alternative 1B) Potential Impacts

Moderately high impacts would result to the following species: The Swainson's Hawk would face foraging habitat impacts of 409.29 acres and two nesting trees. The California Tiger Salamander would face impacts to suitable upland habitat totaling 237.43 acres of direct permanent effects, 58.98 acres of direct temporary effects in the project footprint, and 516.44 acres of indirect effects to upland areas within 250-foot of the project footprint, and would face impacts to suitable aquatic habitat totaling 14.07 acres of direct permanent impacts, 2.92 acres of direct temporary impacts in the project footprint, and 52.45 acres of indirect effects to aquatic features within 250-foot of the project footprint. Vernal Pool Invertebrates would face 0.07 acre of direct impacts and 2.22 acres of indirect impacts. The Valley Elderberry Longhorn Beetle would lose one shrub of suitable habitat and may face additional temporary disturbance. Hartweg's Golden Sunburst would potentially face 3.28 acres of direct permanent effects, 0.57 acre of direct temporary effects in the project footprint, and 11.73 acres of indirect effects.

Cultural Resources

A Historic Property Survey Report/Archaeological Survey Report/Historic Resources Evaluation Report (HPSR/ASR/HRER) was prepared to identify potential significant cultural resources, consisting of historic properties, within the Area of Potential Effects (APE). The APE for the proposed project consists of approximately 15,215 acres, which is the area of direct and indirect effects. The APE extends across rural, suburban, and industrial portions of the project area, as well as including all the parcels in the area that have the potential to be affected by the project. APE also covers areas of removal of existing pavement, potential staging areas, utility relocation, drainage facilities, vegetation clearing, re-planting areas, public utility easements, permanent right-of-way acquisition, and, at a minimum, a 100-foot wide buffer around all anticipated cut and fill limits.

Records searches, supplemental records searches, and pedestrian field surveys were conducted to identify resources within the APE. Some features within the APE were found to be exempt under Attachment 4 of the Section 106 PA(?). Six bridges within high or very

high sensitivity for archaeological deposits were found in the APE depending on the Build Alternative; however, the agricultural and community development have most likely destroyed most surface traces of archaeological deposits within the Archaeological APE. Three resources were assumed eligible for NRHP/CRHR for the purposes of this project only. However, the project will have no direct impacts to the Hetch Hetchy Water and Power transmission lines, or the Warnerville Substation. The project would have a minor indirect effect on the historic resource's setting but would not change the characteristics of the resource that make it eligible under NRHP A and C as part of a larger potential historic district.

A Finding of No Adverse Effects was prepared to consider the effects of the undertaking on the historic properties. Although identification and evaluation efforts are not yet complete, it is anticipated that there will be no adverse effect to the historic properties/historical resources identified within the Area of Potential Effects (APE). The State Historic Preservation Officer has concurred with the Finding of No Adverse Effect determination on July 23, 2019.

Additionally, access to the entirety of the APE was not possible due to right-of-entry limitations; therefore, archaeological site identification and evaluation are not complete at this time. As additional cultural resource identification and evaluation efforts are needed, and as the APE areas with moderate to high buried site sensitivity, a Programmatic Agreement was prepared to implement a phased approach to complete identification, evaluation of potential historic properties, effect finding determinations, and mitigation requirements (if applicable), after right-of-entry to the remaining parcels that have not yet been surveyed has been obtained. Given the high buried resource sensitivity in some areas of the APE, the Programmatic Agreement also includes a stipulation for the preparation of a post-review discoveries plan to be implemented during construction of the project. The State Historic Preservation Officer approved of the stipulations within the Programmatic Agreement by being a signatory on the document on September 19, 2019.

Farmland

The project area includes Prime Farmland and Farmland of Statewide Importance. Construction of the proposed project would directly impact designated farmland, potentially resulting in an incremental loss of this resource. While the project will be mitigating for impacts to farmland, the project will still be removing large quantities of farmland from the existing community. Therefore, even with mitigation, there would be a significant and unavoidable impact to farmland.

Mitigation Acquisition/Purchase

Compensation may be required for the loss of habitat for California Tiger Salamander, Vernal Pool Invertebrates, and Swainson's Hawk. The potential exists for a single mitigation approach to include all three species. Potential mitigation approaches include preservation of suitable habitat at an off-site location (enhancement of the habitat at the off-site location may also be a component of the compensation) or purchase of sufficient habitat credits at a mitigation bank approved by USFWS and California Department of Fish and Wildlife (CDFW).

Compensation may also be required for the loss of farmland, oak woodland and wetlands. Similar to the single mitigation approach for California Tiger Salamander, Vernal Pool Invertebrates and Swainson's Hawk, there is a potential to consolidate farmland, oak woodland and wetlands to one location. Potential mitigation cost estimates are included in the right-of-way cost. See Right-of-Way Data Sheet in **Attachment H**.

The EIR/EIS is the appropriate document for the proposed project (see **Attachment G** for Final EIR/EIS.

6F. Geotechnical Investigation

Preliminary Geotechnical Design/Materials Report (PGDR) dated August 28, 2015, and Structures Preliminary Geotechnical Report (SPGR) dated April 27, 2015 were completed by Crawford and Associates. Based on the preliminary data obtained for the PGDR, geotechnical conditions throughout the project corridor are considered to be suitable for construction of typical roadway elements. Support is generally available within shallow undisturbed, medium dense, granular sediments for new embankments, earth retaining systems, culvert foundations and minor structure foundations (such as sound walls, cantilevered signs, etc.). Evidence was not found for major geologic hazards, such as landslides, subsidence, severe erosion, compressible or expansive soils, or naturally occurring asbestos. The potential for damaging effects due to seismic shaking, such as soil liquefaction, seismic settlement and slope instability, is generally low. Based on geotechnical review of the soil survey and available boring logs, the near-surface soils throughout the corridor are generally sand and silt with expected low expansion potential. Some clay soils near the east end of the project may have higher expansion potential.

Based on the SPGR, support is generally available for new structure foundations within native, undisturbed, medium dense to dense sediments as encountered in the test borings and identified in nearby foundation studies.

For minor structures (e.g., irrigation canal and aqueduct crossings), it is expected that spread footings will be suitable, provided adequate embedment is achieved into

undisturbed medium dense soils or engineered fill and are protected, where necessary, from erosion/scour. The estimated bearing capacities on the order of 3,000 psf can be achieved in these soils, based on the preliminary data for this study and assuming engineered fill is comprised of granular soils or approved import (e.g., Structure Backfill per Caltrans Standards, compacted to 95% relative compaction).

Due to the dense granular soils, deep foundations piles are proposed for major structures including new interchanges, railroad overpasses, overcrossings, undercrossings and connector structures. Either driven piles or Cast-In-Drilled-Hole (CIDH) piles are most suitable. Spread footings are not generally acceptable (except possibly at the east end in rock-like materials of the Mehrten Formation) due to the limited bearing capacity within the uppermost soils and scour potential where crossing natural drainage patterns.

The proposed project will need to identify and implement measures to avoid or minimize potential short and long term geology/soils/seismic impacts as part of the final design process. These measures will be identified in the Geotechnical Design Report (GDR) and Bridge Foundation Report (BFR) that will be prepared during the final design process.

6G. Air Quality Conformity

The proposed project is included in the StanCOG 2018 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS) and the California Transportation Improvement Program System ID# 1000000263. The proposed project's design concept and scope have not changed significantly from what was analyzed in the RTP. This analysis found that the plan and individual projects contained in the plan, are conforming projects and will have air quality impacts consistent with those identified in the State Improvement Plan for achieving the National Ambient Air Quality Standards (NAAQS).

6H. Complete Streets and Climate Change

A Complete Street is a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility. Complete Street concepts apply to roadways in all contexts including local roads and state highways in rural, suburban, and urban areas. The NCC would not preclude a Complete Streets facility from being designed approaching the project within the local jurisdictions. NCC is compatible with Caltrans' intended Complete Streets goals for transportation facilities within Stanislaus County. NCC is also compatible with the regional bikeway projects in the StanCOG Non-Motorized Transportation Master Plan. Where interchanges and local roads are being reconstructed, pedestrian access and Americans with Disabilities Act (ADA) compliance is provided where warranted by current and future land use. Policies related to bicycles and pedestrians are in place in the cities of Modesto, Riverbank

and Oakdale, and Stanislaus County's general plans. Along Segments 2 and 3 from Claus Road to the NCC terminus at proposed SR 108/SR 120 intersection, the expressway could accommodate a shared Class III bike route within the proposed shoulders of NCC. Pedestrian access including sidewalks, ADA curb ramps and crosswalks would be provided along crossroads in Segment 1 and at locations with existing pedestrian access in Segments 2 and 3. Vehicle, bicycle, and pedestrian access included in the project will be provided in accordance with ADA requirements.

The proposed project would result in increased carbon dioxide emissions relative to the baseline condition and for future conditions when compared to the No-Build Alternative. Although greenhouse gas (GHG) emissions are anticipated to increase relative to the baseline condition, future congestion associated with the No-Build Alternative would contribute to potentially higher emissions than if any of the build alternatives were constructed. This shows the benefit of one of the main California Action Plan Strategies to reduce GHG emissions through transportation efficiency.

The proposed project would support implementation of Assembly Bill 32 through Senate Bill 375. The purpose of the proposed project is to reduce congestion and vehicle delays. As discussed in the project's Traffic Operations Report (2015), when compared to the future No-Build Alternative, the Preferred Alternative (Alternative 1B) would increase vehicle miles traveled but would also reduce vehicle hours of delay in the project area by 12 percent to 34 percent. Additionally, as discussed in the 2018 RTP/SCS by StanCOG, implementation of the RTP/SCS will meet, and even exceed GHG emission reduction targets for 2020 and 2035 set by the California Air Resources Board (CARB) under Senate Bill 375. The Senate Bill 375 goals for 2020 and 2035 are a 5 percent and 10 percent reduction in per capita GHGs from 2005 levels; however, StanCOG's plan and strategy include a goal to reduce GHG emissions by 24 percent in 2020 and 21 percent in 2035. As an integral part of the RTP/SCS, implementation of the project would therefore contribute to the regional GHG emissions reduction.

The project is included in a list of Tier I improvements identified in the plan for each transportation mode type including roadways, transit, bicycle and pedestrian, and aviation. Improvements are intended to implement a balanced multi-modal circulation system and improve air quality by reducing vehicle miles traveled and GHG emissions, while accommodating anticipated travel demand. Beyond the typical transportation system improvements (widening roadways and adding traffic signals to improve congestion and mobility), StanCOG is committed to analyzing alternative strategies such as Transportation Systems Management, Transportation Demand Management, and intelligent transportation systems to increase system efficiencies. The alternative strategies would provide increased opportunities for non-auto travel to reduce vehicle miles traveled and improve overall air

quality. These alternative strategies, including mass transit, were analyzed as part of the early planning stages for the project.

6I. Title VI Considerations

Title VI of the Civil Rights Act entails that no person be excluded from, denied the benefits of, or discriminated against by any federal aid activity because of race, color, religion, national origin, gender, age, or handicap. Caltrans and Federal Highway Administration (FHWA) policies demonstrate commitment to this requirement and compliance with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," which is an extension of Title VI. It further requires prevention of "disproportionately high and adverse" health or environmental impacts to minority and/or low-income population to the fullest extent possible, as demonstrated in the Final EIR/EIS.

7. OTHER CONSIDERATIONS AS APPROPRIATE

Public Hearing Process

The California Department of Transportation (Caltrans), District 10, held a Public Hearing on Thursday, September 7, 2017, for the North County Corridor Project Tully Road to SR 120 (New State Route 108). The objective of the Project is to ultimately build a west-east expressway that will improve regional network circulation, relieve existing traffic congestion, reduce traffic delays, accommodate future traffic, and benefit commerce. The Public Hearing was held from 4:00 p.m. to 8:00 p.m. in the Gene Bianchi Center in Oakdale, California.

The Public Hearing provided members of the public and other interested parties an opportunity to learn more about what is being planned and to comment on the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) and Draft Section 4(f) De Minimis Finding for the project. Copies of the documents were available at the hearing for review.

The Public Hearing was publicized through a jumbo postcard invitation sent by first-class U.S. mail, public notices (advertisements) in local newspapers, and a news release to print and broadcast mainstream and alternative media that serve the project area.

Three hundred five persons were signed in at the Public Hearing and provided a print program for the evening with a comment sheet. Attendees were also invited to dictate comments, if preferable.

The Public Hearing was conducted in an open house format. Attendees were invited to sign in as they entered the Community Center and were then met by Caltrans, the local North County Corridor Transportation Expressway Authority (NCCTEA), and other engineering and environmental project team specialists who accompanied them through the extensive map displays and other information stations.

Seventy comment sheets were submitted and 24 attendees dictated comments to the court reporters.

Eight comment sheets and emailed comments were submitted subsequent to the Public Hearing.

Route Matters

Freeway and Controlled Access Highway Agreements

The North County Corridor (NCC) SR 108 East Route Adoption was approved by the California Transportation Commission (CTC) in May 2010. The adopted corridor provides for approximately 18 miles of freeway/expressway on new alignment from near existing SR 219 (Kiernan Avenue)/SR 108 (McHenry Avenue) intersection north of the City of Modesto and west of the City of Riverbank to SR 120 approximately six miles east of the City of Oakdale. Per the CTC Route Adoption, NCC is deemed a freeway from McHenry Avenue/SR 219 to Albers Road and an expressway from Albers Road to proposed SR 108/SR 120 terminus. However, no freeway or controlled access highway agreement exists for NCC. The freeway agreement will be processed immediately after project approval and prior to any other project development actions pending any changes in the limits of the freeway and controlled access highway sections.

Route Adoptions:

In May 2010, the CTC approved a Route Adoption for NCC to become the new SR 108. At that time, the route adopted alignment followed the existing Claribel Road alignment between McHenry Avenue and Claus Road. The proposed NCC alignment veers from Claribel Road to the south from Coffee Road to Claus Road with the Oakdale Road and Roselle Road interchanges. It is anticipated that the request for approval to CTC for clearing changes in the route adopted alignment will be prior to beginning final design.

Currently SR 120 is a controlled access highway which will remain the same with the new NCC public road connection east of the City of Oakdale. The new NCC public road connection may impact the SR 120 route adoption and current agreement.

The intent is for the Project Report to act as the New Public Road Connection document. The CTC would approve the route alignment change after the FED.

Jurisdiction Resolution

Jurisdiction Resolution, a resolution of support from public, will be needed.

Permits

Encroachment permits and permits to enter private property have been obtained from Caltrans and property owners to perform surveys, geotechnical borings and environmental studies. A separate encroachment permit will be required for construction activities within the State right-of-way.

Table 7-1 summarizes the following agreements, permits, and concurrences required prior to project construction:

Table 7-1 Permits and Project Approvals

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species Review and comment on 404 Permit	USFWS issued Section 7 Biological Opinion on December 11, 2019.
United States Army Corps of Engineers	Section 404 Permit for filling or dredging waters of the United States.	Application to be submitted during final design.
Natural Resources Conservation Service	Farmland Conversion Impact Rating for Corridor Type Projects	Review of farmland analysis. Completed Analysis is included in Section 3.1.3.
California Department of Fish and Wildlife	1602 Agreement for Streambed Alteration Section 2081 Agreement for Threatened and Endangered Species	Application to be submitted during final design.
Regional Water Quality Control Board – Central Valley Region 5	401 Certification	Application to be submitted during final design.
United States Environmental Protection Agency	Approval of Right of way acquisition for Riverbank Army Depot Superfund Site	Application to be submitted during final design.
Department of Toxic Control	Approval of Right of way acquisition for Riverbank Army Depot Superfund Site	Application to be submitted during final design.
State Historic Preservation Officer	Finding of Effect Programmatic Agreement and Management Plan	SHPO issued concurrence on Finding of No Adverse Effect on July 23, 2019. SHPO issued concurrence on Programmatic Agreement on September 19, 2019.
Hetch Hetchy	Encroachment Permit and Permanent Easement	Application to be submitted during final design.
Oakdale Irrigation District	Encroachment Permit and Permanent Easement	Application to be submitted during final design.
Modesto Irrigation District	Encroachment Permit and Permanent Easement	Application to be submitted during final design.
Union Pacific Railroad	Encroachment Permit and Permanent Easement	Application to be submitted during final design.

Agency	Permit/Approval	Status
Burlington Northern Santa Fe Railroad	Encroachment Permit and Permanent Easement	Application to be submitted during final design.
Sierra Railroad	Encroachment Permit and Permanent Easement	Application to be submitted during final design.
California Transportation Commission	Approval of Alignment Change to Route Adoption in May 2010	Request for approval after FED.

Cooperative Agreements

A cooperative agreement will be utilized for the final design and right-of-way phases between Caltrans and local agencies for their cost contribution to the project. The cooperative agreement will be executed once the project has been programmed and a Baseline Amendment is approved by the CTC.

Future cooperative agreements would be proposed to cover the Construction phase responsibilities for Caltrans, Stanislaus County, and the cities of Modesto, Riverbank and Oakdale. These agreements would include contract advertisement, award, and administration.

Other Agreements

Maintenance and Electrical

As part of this project and depending on the location, Caltrans District 10, City of Riverbank and/or Stanislaus County will complete a separate maintenance and electrical agreement for permanent traffic signals on local road crossings at ramp terminus and at-grade intersections. The proposed signals and intersections for this project are located mainly in Stanislaus County with a few in the City of Riverbank. A freeway maintenance agreement will be required for new local road overcrossing and undercrossing structures and interchanges including landscape, drainage, retaining walls, sound walls, architectural bridge railings, and street lights. Maintenance agreements may also be required for drainage and storm water facilities.

Relinquishment

For the relinquishment of existing SR 108, Caltrans District 10 and cities of Riverbank and Oakdale and Stanislaus County will complete relinquishment agreements during the next phase of the project. It is anticipated that costs to bring the existing SR 108 to a state of good repair will be a project cost.

Railroad Construction and Maintenance

The project will cross two railroad facilities, BNSF near the City of Riverbank and Sierra Railroad near the City of Oakdale, and will require an executed construction and maintenance agreement from BNSF and Sierra Railroad prior to ready to list.

Transportation Management Plan for Use During Construction

To minimize traffic disruption, it will be necessary to consult with local agencies, including fire and law enforcement, prior to implementation of a Transportation Management Plan (TMP). The TMP would be in place for the construction phase throughout the duration of construction activities. The TMP would be made available to the public and to each jurisdiction within the study area. Caltrans shall conduct public outreach to discuss the TMP. The TMP would be designed to minimize project related traffic delay and accidents by adopting traditional traffic mitigation strategies and through an innovative combination of public and motorist information, demand management, incident management, system management, alternate route strategies, and construction strategies. The TMP would include detour signage, public transportation information, construction timing, and other useful construction information for residents and motorists. The TMP would also include coordination and routing of school buses and emergency vehicles during construction. The TMP for this project will provide maximum safety to the public from construction activities and protect workers from traffic hazards. The public will be notified of anticipated delays prior to beginning any work within the project area. The following elements shall be included in the TMP:

- Potential adverse impacts associated with road closures will be minimized through coordination between Caltrans and local agencies. Media campaign will be organized to release detour routes and traffic information. Detour signage will be installed near construction zone to effectively redirect traffic.
- Potential adverse impacts to circulation and access will be avoided by maintaining as many lanes as possible open along Claribel Road in both directions.
- Construction will be scheduled outside of peak traffic and business hours to minimize delays and potential decreases in patronage to nearby businesses.
- Pedestrian routes along community road interchanges, overcrossings, and undercrossings will be reestablished and be clearly defined outside of construction zones.
- Potential economic impacts related to decreased patronage to businesses at interchanges, overcrossings, and undercrossings will be minimized by locating directional signage to key commercial centers and providing for accessible ingress/egress routes into parking lots.

- To minimize potential impacts to residential communities accessed by interchanges, overcrossings, and undercrossings, ingress/egress routes to neighborhoods adjacent to or affected by construction activity shall be established and potential detours should be clearly posted.
- The potential for physical impacts related to construction activity, including increased noise and truck traffic, decreased air quality, and changes in the visual environment from lighting and other construction activity, shall be minimized as identified in corresponding technical reports.
- Media Campaigns will be organized to release information regarding road closure, detour routes, construction location, construction schedule, and other information related to transportation.

To minimize disruption to public transportation, the following elements shall be included in the TMP:

- To minimize potential impact to public transportation routes, the TMP will include specific locations for relocated bus stops or bus detours. Bus stops should be clearly identified and accessible to pedestrians through safe walkways and connections to business and residential centers.
- Information regarding bus stop relocations and bus detours will be released by the project's Media Campaign.

Emergency Services: Construction activities under the proposed project may cause temporary lane restrictions, lane closures or detours. In addition, local roads may experience higher than normal traffic volumes as a result of disruptions on major roads and arterials. Such disruption to traffic could increase response time of mobile emergency services within the study area. However, no impact would occur to emergency service facilities, nor would there be any long-term impacts. Coordination of emergency service vehicles will be included in the TMP to minimize any potential impact.

Utilities: To minimize disruption, relocation of most utilities would occur before project construction. Utility outages will be scheduled in hours that would cause minimal impact to the users. Unavoidable temporary disruptions to utility usage would be approved by the appropriate utility and public agencies. Schedule of utility outages will be released to the general public through the project media campaign and/or other means of communication.

Public Transportation: Coordination with public transportation will be very important to minimize delays and maintain ridership. During construction, public transit users may experience delays and disruptions caused by lane restrictions, lane closures, or temporary detours. In addition, local roads may experience higher than normal traffic volumes as a result of disruptions on major roads and arterials. A variety of transit services are provided in the project study area, including bus and passenger rail service such as Stanislaus

Regional Transit (StaRT), Modesto Area Express (MAX) and Amtrak. Amtrak operation would not be substantially affected by the project. The new Claribel Road and NCC would be elevated over the BNSF Railroad with separate overhead structures. The BNSF Railroad would remain at its current alignment, and service would not be impacted during construction.

Stage Construction

A Stage Construction/Traffic Handling Plan will be included in final design to clarify how individual project components can be constructed while maintaining the existing transportation network. Utilities are anticipated to be relocated prior to and during construction of NCC. Detours would be developed for each stage of the project to accommodate closures and unanticipated events. The following stages would be anticipated to construct NCC:

STAGE 1

Traffic would remain on the existing roadways with temporary closures to set up temporary railing and traffic control, pavement transitions and temporary connections. Construction of NCC would begin by mainly building travel lanes and drainage features outside of the existing roadways and right-of-way. Depending on the corridor location, construction may occur on one or both sides of the existing roadways. In rural areas where there are no existing roadways within the project footprint, various portions of NCC can be built without traffic control. This would include NCC east of Claus Road. Widening of cross streets would occur to the outside while traffic remains on existing lanes. At undercrossings and overcrossings, full structure construction would be completed with the use of falsework. Due to the grade differences at overcrossings, structure and approach work will begin by constructing temporary detours parallel to existing cross streets on one or both sides. While detours are being built, traffic will remain on existing cross streets with closures for pavement transitions. Then traffic can be shifted onto the temporary detours and construction of the overcrossing can begin. Depending on available right-of-way along cross streets/roads, structure work may need to be half-width construction allowing room for a temporary detour parallel to the proposed structure. Temporary shoring systems may be used to support embankment between detours and overcrossing construction. Local access would be maintained. Detours would be used as needed.

STAGE 2

Traffic would be shifted to the newly built outside NCC lanes. Depending on the corridor location, some traffic would still remain on portions of existing roadways. Pavement transitions and temporary signals would be used to connect to existing facilities. All or portions of existing roadways would be removed to continue building NCC travel lanes

and median. Widening of cross streets would continue by completing the widening work and overlaying the existing portions. Construction within rural areas, construction of undercrossings, overheads and overcrossings will continue. Local access would be maintained. Detours would be used as needed.

ADDITIONAL STAGES

Additional stages would be needed to accommodate traffic shifts due to grade differences at overcrossings, undercrossings, overheads, pavement conforms, and other features. Local access would be maintained. Detours would be used as needed.

Utility Coordination

Existing utilities impact the difficulty and constructability of the project. Preliminary research was conducted to determine what utilities exist within the proposed corridor. A list of utilities present in the project area is in **Section 5A**. Coordination with utility owners will occur throughout project design and construction phases to minimize disturbance.

Accommodation of Oversize Loads and Construction Loads

NCC will provide a new facility with standard vertical clearance, lanes, shoulders and structures that will improve traffic operations and increase capacity, and thus reduce disruption to traffic caused by oversized loads and construction loads due to heavy equipment and materials. The project improvements will also accommodate STAA vehicles. During final design, potential construction access routes and haul routes will be determined for carrying heavy equipment and materials. If needed, proposed structure locations will be evaluated and if it will be used as a potential construction access route, construction loading and additional vertical clearances will be incorporated into the structure design.

Graffiti Control

Graffiti within the project limits has not been observed. The use of anti-graffiti coatings and appropriated design features would be investigated during the final design phase of the project.

NPDES/Storm Water

The project is being designed in accordance with Caltrans policies and manuals for compliance with NPDES storm water law. The Storm Water Data Report (SWDR) has been prepared in accordance with Caltrans procedures. The signed cover page to the SWDR is included as Attachment J.

Earthwork will include cut and fill slopes and footing excavation associated with structure construction as shown on the project plans. Slopes will be constructed at 4:1 (H:V); however, slopes as steep as 2:1 will be necessary in various areas with high embankments. Construction of retention basins and longitudinal swales will address storm water quality for the project. Existing drainage patterns will be maintained but will be improved with the project to convey the increase in storm water flowing to several retention basins.

The following is a brief summary of the SWDR analysis and findings. The project is located within Caltrans and Stanislaus County right-of-way's. This document addresses the area within Caltrans right-of-way. Within Caltrans right-of-way, the disturbed soil area (DSA) created by the Preferred Alternative (Alternative 1B) is approximately 982 acres (see **Table 7-2**). The DSA includes the area disturbed to accommodate the proposed 4-lane roadway, median, roadside ditches, retention basins, and the area needed for staging and construction. The total DSA for this project is shown in the table below.

Table 7-2 – Disturbed Soil Area by Alternative

Segment	Street Limits	Disturbed Soil Area (ac)							
		Alternative 1A		Alternative 1B (Preferred)		Alternative 2A		Alternative 2B	
		CT	Co	CT	Co	CT	Co	CT	Co
1	Tully Road to Coffee Road	126	78	126	78	126	78	126	78
	Coffee Road to Claus Road	239	126	239	126	239	126	239	126
2	Claus Road to Bentley Road	178	90	178	90	106	119	106	119
	Bentley Road to Oakdale Waterford Hwy	56	39	56	39	111	34	111	34
3	Oakdale Waterford Hwy to Wamble Road	190	17	161	34	192	24	157	8
	Wamble Road to Lancaster Road	0	0	222	61	0	0	200	55
Total		**789**	**350**	**982**	**428**	**774**	**381**	**939**	**420**

*CT = Area in State right-of-way; Co = Area in Stanislaus County right-of-way

The total DSA was determined by summing the newly paved areas, areas of cut and fill, and areas devoted to offsets for construction activities. The DSA can be predominately accounted for by the new interchanges, at-grade intersections, overcrossings, mainline and median footprints, the addition of basins and swales, and the widened local roadways.

NCC will require the addition of impervious surfaces. **Table 7-3** identifies current areas of impervious surface within the project limits and post-construction impervious areas.

Table 7-3 – Area of Impervious Surface by Alternative

Segment	Street Limits	Impervious Area (ac)																							
		Alternative 1A						Alternative 1B (Preferred)						Alternative 2A						Alternative 2B					
		Existing		Proposed		NNIA		Existing		Proposed		NNIA		Existing		Proposed		NNIA		Existing		Proposed		NNIA	
		CT	Co	CT	Co	CT	Co	CT	Co	CT	Co	CT	Co	CT	Co	CT	Co	CT	Co	CT	Co	CT	Co	CT	Co
1	Tully Road to Coffee Road	12	10	51	40	39	30	12	10	51	40	39	30	12	10	51	40	39	30	12	10	51	40	39	30
	Coffee Road to Claus Road	7	12	54	57	47	45	7	12	54	57	47	45	7	12	54	57	47	45	7	12	54	57	47	45
2	Claus Road to Bentley Road	7	12	49	43	42	31	7	12	49	43	42	31	3	5	36	54	33	49	3	5	36	54	33	49
	Bentley Road to Oakdale Waterford Hwy	1	3	19	10	18	7	1	3	19	10	18	7	2	5	32	12	30	7	2	5	32	12	30	7
3	Oakdale Waterford Hwy to Wamble Road	6	3	39	7	33	4	1	3	33	17	32	15	6	1	46	10	40	9	1	1	42	4	41	3
	Wamble Road to Lancaster Road	0	0	0	0	0	0	2	2	34	14	32	12	0	0	0	0	0	0	2	1	34	10	32	9
Total		33	41	212	157	179	116	30	41	240	181	210	139	30	33	219	174	189	140	27	34	249	177	222	143

*NNIA = Net New Impervious Area; CT = Area in State right-of-way; Co = Area in Stanislaus County right-of-way

NCC will be designed and constructed to minimize storm water runoff impacts by limiting the disturbance of existing vegetation and utilizing all appropriate design pollution prevention strategies, treatments, and construction site Best Management Practices (BMP's).

Life Cycle Cost Analysis

A Life Cycle Cost Analysis (LCCA) was performed to determine the most cost effective structural section for this project. The following is a summary of these analyses:

The NCC corridor consists of two types of roadway improvements: new mainline construction, and new ramp construction. Furthermore, for the LCCA, the 18-mile-long mainline project was broken into four smaller segments, with differing pavement design parameters for each. The four mainline segments are summarized below:

- NCC West of Claus Road – Four Lane Portion
- NCC West of Claus Road – Six Lane Portion
- NCC from Claus Road to Albers Road
- NCC East of Albers Road

Each of these roadway segments and the ramps were analyzed separately to obtain more refined results.

The new mainline segments will be analyzed for a 40-year flexible pavement and a 40-year Continuously Reinforced Concrete Pavement. The ramp analysis will include a comparison of 20-year flexible pavement, 40-year flexible pavement, and a 40-year Jointed Plain Concrete Pavement. The following section summarizes the pavement analysis alternatives for each segment.

NCC West of Claus Road – Four Lane Portion

Alternative 1 – Flexible Pavement, 40-year design life, with open-graded asphalt friction course (OGFC) and Rubberized Hot Mix Asphalt (RHMA):

0.2' RHMA
1.45' Hot Mix Asphalt (HMA)
0.50' Aggregate Base (AB)

Alternative 2 – Rigid Pavement, 40-year design life, Continuously Reinforced Concrete Pavement (CRCP)

0.85' CRCP
0.25' Hot Mix Asphalt – Type A (HMA-A)
0.70' Aggregate Subbase (AS)

NCC West Claus Road – Six Lane Portion

Alternative 1 – Flexible Pavement, 40-year design life, with OGFC and RHMA

0.2' RHMA
1.40' HMA
0.50' AB

Alternative 2 – Rigid Pavement, 40-year design life, CRCP

0.85' CRCP
0.25' HMA-A
0.70' AS

NCC from Claus Road to Albers Road

Alternative 1 – Flexible Pavement, 40-year design life, with OGFC and RHMA

0.2' RHMA
1.40' HMA
0.50' AB

Alternative 2 – Rigid Pavement, 40-year design life, CRCP

0.85' CRCP
0.25' HMA-A
0.70' AS

NCC East of Albers Road

Alternative 1 – Flexible Pavement, 40-year design life, with OGFC and RHMA

0.2' RHMA

1.20’ HMA
0.50’ AB

Alternative 2 – Rigid Pavement, 40-year design life, CRCP
0.80’ CRCP
0.25’ HMA-A
0.60’ AS

NCC Ramps

The NCC ramps were split into two separate analyses, with the first comparing three alternatives and the second comparing two alternatives. These are described below:

First Analysis:
Alternative 1 – Flexible Pavement, 20-year design life (RHMA optional)
0.55’ HMA (optional 0.2’ RHMA for the top surface layer)
0.85’ AB
0.80’ AS

Alternative 2 – Flexible Pavement, 40-year design life, with OGFC and RHMA
0.2’ RHMA
1.15’ HMA
0.50’ AB

Alternative 3 – Rigid Pavement, 40-year design life, Jointed Plain Concrete Pavement (JPCP) + HMA-A
0.85’ JPCP
0.25’ HMA-A
0.60’ AS

Second Analysis:
Alternative 1 – Flexible Pavement, 20-year design life (RHMA optional)
0.55’ HMA (optional 0.2’ RHMA for the top surface layer)
1.60’ AB

Alternative 2 – Rigid Pavement, 40-year design life, JPCP with Lean Concrete Base (LCB)
0.85’ JPCP
0.35’ LCB
0.60’ AS

The LCCA cost calculation results provide Present Value dollar amounts and are totaled to provide the total Life-Cycle Cost. The results for the analyses are summarized in the tables below:

Table 7-4 Mainline New Construction
NCC West of Claus Road – Four Lane Portion LCCA Results

	Agency Cost ($1,000)	User Cost ($1,000)	Total Life-Cycle Cost ($1,000)
Alternative 1	$28,995.57	$28.79	$29,024.36
Alternative 2	$25,918.97	$0.00	**$25,918.97**

The alternative with the lowest Total Life-Cycle Cost for the 55-year analysis period is Alternative 2. As such, the preferred pavement alternative for the segment of NCC West of Claus Road – Four Lane Portion is the Rigid Pavement, 40-year design life, Continuously Reinforced Concrete Pavement.

Table 7-5 Mainline New Construction
NCC West of Claus Road – Six Lane Portion LCCA Results

	Agency Cost ($1,000)	User Cost ($1,000)	Total Life-Cycle Cost ($1,000)
Alternative 1	$47,545.93	$16.84	**$**47,562.77
Alternative 2	$47,051.03	$0.00	**$47,051.03**

The alternative with the lowest Total Life-Cycle Cost for the 55-year analysis period is Alternative 2. As such, the recommended pavement alternative for the segment of NCC West of Claus Road – Six Lane Portion is the Rigid Pavement, 40-year design life, Continuously Reinforced Concrete Pavement.

Table 7-6 Mainline New Construction
NCC from Claus Road to Albers Road LCCA Results

	Agency Cost ($1,000)	User Cost ($1,000)	Total Life-Cycle Cost ($1,000)
Alternative 1	$25,981.30	$26.29	$26,007.59
Alternative 2	$21,107.01	$0.00	**$21,107.01**

The alternative with the lowest Total Life-Cycle Cost for the 55-year analysis period is Alternative 2. As such, the recommended pavement alternative for the segment of NCC from Claus Road to Albers Road is the Rigid Pavement, 40-year design life, Continuously Reinforced Concrete Pavement.

Table 7-7 Mainline New Construction
NCC East of Albers Road LCCA Results

	Agency Cost ($1,000)	User Cost ($1,000)	Total Life-Cycle Cost ($1,000)
Alternative 1	$64,719.73	$21.79	$64,741.52
Alternative 2	$64,364.00	$0.00	**$64,364.00**

The alternative with the lowest Total Life-Cycle Cost for the 55-year analysis period is Alternative 2. As such, the recommended pavement alternative for the segment of NCC East of Albers Road is the Rigid Pavement, 40-year design life, Continuously Reinforced Concrete Pavement.

Table 7-8 Ramp New Construction
NCC Ramps LCCA Results

	Agency Cost ($1,000)	User Cost ($1,000)	Total Life-Cycle Cost ($1,000)
Analysis 1			
Alternative 1	$24,096.55	$20.01	$24,116.56
Alternative 2	$25,774.63	$4.51	$25,779.14
Alternative 3	$23,510.94	$0.80	$23,511.74
Analysis 2			
Alternative 1	$22,952.81	$20.01	$22,972.82
Alternative 2	$22,624.34	$0.80	**$22,625.14**

The alternative with the lowest Total Life-Cycle Cost for the 55-year analysis period is Alternative 2 from the Second Analysis. As such, the recommended pavement alternative for the NCC Ramps is the Rigid Pavement, 40-year design life, Jointed Plain Concrete Pavement with Lean Concrete Base.

8. FUNDING PROGRAMMING AND ESTIMATE

Funding

The Stanislaus County Regional Transportation Improvement Program (RTIP) initially proposed $6.2 million in fiscal year 2008/09 to fund the costs of preparing PA&ED. Funding for the current phase of the project is being provided by regional transportation impact fees. The NCCTEA has programmed Public Facilities Fees for the plans, specifications and estimate (PS&E) phase. For the construction phase, the NCCTEA has a funding plan that includes a combination of developer fees, local, state and federal funding sources, including up to $91 million of Interregional Transportation Improvement Program

(ITIP) funds that the State committed to the NCC project as part of the previously cancelled Oakdale Bypass project. Additionally, in November 2016, Stanislaus County voters passed a transportation sales tax measure (Measure L) that will provide additional local funds towards the project and allow the agency to compete for various State and Federal funding programs, including SB-1 Freight Mobility program funds. It has been determined that this project is eligible for Federal-aid funding.

Programming

The project is programmed for current dollar funding of $680 million for construction and right of way costs in the Regional Transportation Improvement Program (RTIP), as shown below in **Table 8-1**.

Table 8-1 StanCOG 2014 Regional Transportation Plan

Tier	Location	Project Limits	Description	Total Cost	Construction Year	Funding Source	Purpose/ Need
1	North County Corridor	Tully Rd to SR 108/ SR 120	Construct a 2-6 lane expressway	$680,000,000	2026	Measure L, SB 1, STIP, CMAQ, STBG	Capacity Enhance, Safety, Operations

Source: 2018 Regional Transportation Plan (StanCOG)

Capital outlay support and project Estimates are summarized below:

Table 8-2 Capital Outlay Support and Project Estimates

	Fiscal Year Estimate								
	Prior	17/18	18/19	19/20	20/21	21/22	22/23	Future	Total
Component	In millions of dollars ($1,000,000)								
PA&ED Support	13.0	1.0	1.0	1.0					16.0
PS&E Support				3.0	3.5	3.5	3.0		13.0
Right-of-Way Support				2.0	4.0	4.0	4.7	5.0	19.7
Construction Support							15.0	37.3	52.3
Right-of-Way*							284.0		284.0
Construction**							100.0	369.0	469.0
Total	13.0	1.0	1.0	6.0	7.5	7.5	406.7	411.3	854

**Right-of-way capital cost escalated at 5% per year.*
***Construction capital cost escalated at 3.5% per year.*

Estimate

The construction cost estimate includes noteworthy elements. The significant earthwork volume is due to the extensive fill material required to elevate NCC over canals, railroads, cross streets and local access roads. Numerous structures are also required to cross over these facilities. In addition, many large retention basins and drainage systems are required due to storm water management requirements in flat terrain.

9. DELIVERY SCHEDULE

The proposed project is planned to be constructed in one phase. The overall schedule is summarized below:

Table 9-1 Project Schedule

Project Milestones		Milestone Date (Month/Day/Year)	Milestone Designation (Target/Actual)
PROGRAM PROJECT	M015	2008	A
BEGIN ENVIRONMENTAL	M020	8/23/10	A
NOTICE OF PREPARATION (NOP)	M030	8/30/10	A
NOTICE OF INTENT (NOI)	M035	8/23/10	A
CIRCULATE DED EXTERNALLY	M120	9/9/17	A
PA & ED	M200	3/31/20	T
RIGHT-OF-WAY REQUIREMENTS	M224	11/24/20	T
REGULAR RIGHT-OF-WAY	M225	2/10/21	T
PS&E TO DOE	M377	11/30/21	T
DRAFT STRUCTURES PS&E	M378	11/30/21	T
RIGHT-OF-WAY CERTIFICATION	M410	7/8/22	T
READY TO LIST	M460	7/15/22	T
FUND ALLOCATION	M470	8/12/22	T
HEADQUARTERS ADVERTISE	M480	8/19/22	T
AWARD	M495	10/28/22	T
APPROVE CONTRACT	M500	12/2/22	T
CONTRACT ACCEPTANCE	M600	12/31/24	T
END PROJECT	M800	12/1/26	T
FINAL PROJECT CLOSEOUT	M900	12/31/26	T

10. RISKS

The Risk Register (see **Attachment L**) was prepared to assess, respond, and monitor identified project risks that may occur throughout the life of the project. The risk registry is designed as a tool to help the PDT and project sponsor in their decisions regarding Build

Alternatives and objectives, and encourages the project team to take appropriate measures to minimize adverse impacts to the project scope, schedule, or cost. However, the risk register cannot identify all risks in advance of occurrence for a project, as some risks are unknown.

The risk register identifies separate active risks to the project. Risk Managers will be assigned for all key project risks and each key risk will be managed to minimize potential cost, scope, and/or schedule impacts.

11. FHWA COORDINATION

FHWA has deemed this project a Project of Division Interest (PoDI). FHWA, working with Caltrans and the project sponsors, will enter into a Project Oversight Agreement (POA) during the PS&E phase which will outline, based on the project risks, the level of review and oversight that FHWA will provide for this project.

12. PROJECT REVIEWS

Interchange geometric review was conducted on March 17, 2015 by Paul Gennaro, Headquarters Project Delivery Coordinator, and Mike Janzen, Headquarters Design Reviewer, and both concurred with the proposed interchange configurations.

Geometric reviews were also conducted by District 6 Design Oversight, on November 7, 2013 and December 12, 2013 and concurred with the proposed geometrics. The Design Standards Decision Document has been reviewed by Caltrans and received concurrence from D10 Maintenance and Landscape Architect Branch Chiefs and approval from the District Design Liaison for the steeper than standard embankment side slopes on January 15, 2020. The DSDD was approved on February 11, 2020.

District Constructability and Safety Review by all Caltrans functional branches was conducted on August 25, 2015.

13. PROJECT PERSONNEL

Name	Title	Phone #
Mimi Huie	Oversight Project Manager	(209) 948-7976
Kal Daher	Design Oversight Manager	(559) 230-3130
Anton Kismetian	Design Oversight Engineer	(559) 230-3141
Jennifer Lugo	Environmental Management	(559) 445-6172
Juan Torres	EnvironmentalReview	(559) 445-6479
Vu Nguyen	Traffic Operations Branch	(209) 603-5126
Jaime Quesada	Traffic Operations Review	(209) 948-7184
Anthony Dorn	Right-of-Way Branch	(209) 948-3858
David Leamon	Stanislaus County	(209) 525-4302
Chris Brady	Stanislaus County	(209) 525-4130
Elizabeth Hahn	StanCOG	(209) 525-4633
Bill Sandhu	City of Modesto	(209) 577-5356
Kathleen Gleek	City of Riverbank	(209) 863-7172
Jeff Gravel	City of Oakdale	(209) 845-3615
Matt Satow	DHA Project Manager	(916) 363-4210
Jose Silva	DHA Project Engineer	(916) 363-4210
Namat Hosseinion	Dokken Environmental	(916) 858-0642
Eddie Barrios	Fehr & Peers Traffic	(925) 930-7100

14. ATTACHMENTS

A. Vicinity Map
B. Location Map
C. Project Build Alternatives
D. Typical Sections, Layouts and Profiles
E. Advanced Planning Studies
F. Preliminary Cost Estimates
G. Environmental Impact Report/Environmental Impact Statement
H. Right-of-Way Data Sheets with Utility and R/W Exhibits
I. Transportation Management Plan Data Sheets
J. Storm Water Data Report (PE and PM signed cover page)
K. Risk Register