ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT

State Route 37 Sears Point to Mare Island Improvement Project Phase 2

Resolution TCEP-P-2526-07B
(to 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) effective on 12/4/2025 (will be completed by CTC), is made by and between the California Transportation Commission (Commission), the California Department of Transportation (Caltrans), the Project Applicant, Metropolitan Transportation Commission and the Implementing Agency, Caltrans, sometimes collectively referred to as the "Parties".

3. RECITAL

3.1 Whereas at its 6/26/2025 meeting the Commission approved the Trade Corridor Enhancement Program and included in this program of projects the State Route 37 Sears Point to Mare Island Improvement Project Phase 2, 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***, the Project Report attached hereto as ***Exhibit B***, the Performance Metrics Form, if applicable, attached hereto as ***Exhibit C***, as the baseline for project monitoring by the Commission.

3.2 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 _____, "Adoption of Program of Projects for the Active Transportation Program", dated _____
- ☐ Resolution _____, "Adoption of Program of Projects for the Local Partnership Program", dated _____
- ☐ Resolution _____, "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated _____
- ☐ Resolution _____, "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated _____
- ☑ Resolution G-25-42, "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated 6/26/2025

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 MTC and Caltrans agrees to secure funds for any additional costs of the project.

4.6 MTC and Caltrans agrees to report to Caltrans on a quarterly basis; on the progress made toward the implementation of the project, including scope, cost, schedule, and anticipated benefits/performance metric outcomes.

4.7 Caltrans agrees to prepare program progress reports on a 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 MTC and Caltrans 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 MTC and Caltrans agrees to submit a timely Project Performance Analysis as specified in the Commission's SB 1 Accountability and Transparency Guidelines.

4.10 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 and performance metric outcomes during the course of the project, and retain those records for six years from the date of the final closeout of the project. Financial records will be maintained in accordance with Generally Accepted Accounting Principles.

4.11 The 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 six 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 Performance Metrics
See Performance Metrics Form, if applicable, attached as Exhibit C.

5.4 Additional Provisions and Conditions *(Please attach an additional page if additional space is needed.)*

In the event of a cost overrun, the department retains full discretion to determine whether and to what extent it will cover any additional costs, on a case-by-case basis. Any decision to provide funding for a cost overrun will be based on a thorough evaluation of the project's circumstances, including but not limited to the project's alignment with state priorities, the cause and nature of the overrun, and the project's financial management plan. Projects must demonstrate responsible financial management, including taking appropriate steps to control costs and prevent further increases. The department reserves the right to deny funding for cost overruns at its sole discretion, particularly when cost escalations are deemed unreasonable or avoidable, or when no concrete plan is in place to mitigate future risks.
The Department will only consider supplemental TCEP funding on one phase per project. For example, if a project has a cost increase in PS&E or RW, the state will not consider funding a cost increase in Construction. The state's contribution to the overrun, shall not exceed 20% of the original TCEP state share contributions at the time of TCEP adoption as identified in the Project Programming Request (PPR) at the time of Baseline agreement.

Attachments:

Exhibit A: Project Programming Request Form
Exhibit B: Project Report
Exhibit C: Performance Metrics Form *(if applicable)*

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT

Project Name: State Route 37 Sears Point to Mare Island Improvement Project Phase 2

Resolution: TCEP-P-2526-07B

(to be completed by CTC)

09/23/2025
Date

Andrew Fremier
Executive Director,
Metropolitan Transportation Commission
Project Applicant

09/18/2025
Date

Javier Mendivil
Regional Project Manager
Implementing Agency

David Ambuehl
David Ambuehl (Sep 26, 2025 14:47:36 PDT)

09/26/2025
Date

David Ambuehl
District Director (Acting)
California Department of Transportation

11/20/2025
Date

Dina El-Tawansy
Director
California Department of Transportation

12/16/2025
Date

Tanisha Taylor
Executive Director
California Transportation Commission

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6160-2024-0001 v1

Amendment (Existing Project) ☒ YES ☐ NO | Date 10/03/2025 07:33:04

Programs ☐ LPP-C ☐ LPP-F ☐ SCCP ☐ TCEP ☐ STIP ☐ Other

District	EA	Project ID	PPNO	Nominating Agency	
04	1Q761	0419000255	5202A	MTC-SAFE	
County	**Route**	**PM Back**	**PM Ahead**	**Co-Nominating Agency**	
Sonoma County	37	2.400	6.200	Caltrans HQ	
Solano County	37	0.000	8.500	**MPO**	**Element**
Sonoma County	121	0.000	0.200	MTC	Capital Outlay
Project Manager/Contact			**Phone**	**Email Address**	
Kevin Chen,Javier Mendivil			415-778-5338	kchen@bayareametro.gov	

Project Title

State Route 37 Sears Point to Mare Island Improvement Project Phase 2

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

In Sonoma, Napa, and Solano Counties on State Route 37 from 1.0 mile west of State Route 121 at Sears Point to Napa River Bridge in Vallejo. The Project will promote higher vehicle occupancy and support multimodal travel, reduce traffic delays, introduce new micro-transit/ vanpool, increase freight throughput, improve safety, preserve and protect surrounding ecosystems, and improve corridor resilience against flooding. Phase 2 improvements will convert the existing eastbound (EB) lane to a high-occupancy vehicle (HOV) lane, add one additional lane as a new tolled lane in the EB direction, raise the profile grade at the locations most vulnerable to flooding, widen Sonoma Creek Bridge and add a bike detection system to allow safe passage for bicyclists, relocate/raise equipment to improve resiliency, provide tolling infrastructure, intelligent transportation system, highway patrol observational areas, lighting and signage, and implement public access improvements.

Component	Implementing Agency
PA&ED	MTC-SAFE
PS&E	Caltrans HQ
Right of Way	Caltrans HQ
Construction	Caltrans HQ

Legislative Districts

Assembly:	10,14	Senate:	3	Congressional:	5

Project Milestone		Existing	Proposed
Project Study Report Approved			
Begin Environmental (PA&ED) Phase		07/22/2020	07/22/2020
Circulate Draft Environmental Document	Document Type EIR	01/13/2022	01/13/2022
Draft Project Report		12/31/2021	12/31/2021
End Environmental Phase (PA&ED Milestone)		02/09/2023	02/09/2023
Begin Design (PS&E) Phase		05/31/2023	05/31/2023
End Design Phase (Ready to List for Advertisement Milestone)		07/03/2026	01/04/2027
Begin Right of Way Phase		05/31/2023	05/31/2023
End Right of Way Phase (Right of Way Certification Milestone)		07/01/2026	12/01/2026
Begin Construction Phase (Contract Award Milestone)		12/07/2026	08/26/2027
End Construction Phase (Construction Contract Acceptance Milestone)		05/15/2029	11/15/2029
Begin Closeout Phase		05/16/2029	11/16/2029
End Closeout Phase (Closeout Report)		11/15/2030	05/16/2031

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PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6160-2024-0001 v1

Date 10/03/2025 07:33:04

Purpose and Need

Purpose of the Project:
The purpose of the Project is to improve traffic flow and peak travel times and increase vehicle occupancy (number of people moved per vehicle) in the SR 37 corridor between SR 121 and the Mare Island interchange.

Project Need:
The Project is needed to address recurring congestion in the near term on SR 37, where the highway narrows to one lane in each direction between SR 121 and the Mare Island interchange. Capacity and merging constraints at present result in traffic queuing at the SR 37/SR 121 Intersection. Current demand and anticipated future transportation demand contribute to the need for this Project.

NHS Improvements ☒ YES ☐ NO	Roadway Class 1	Reversible Lane Analysis ☒ YES ☐ NO

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

Project Outputs

Category	Outputs	Unit	Total
TMS (Traffic Management Systems)	Traffic monitoring detection stations	EA	7
Bridge / Tunnel	Modified / Improved interchanges	SQFT	10,824
Pavement (lane-miles)	HOV/HOT mainline constructed	Miles	8.2
TMS (Traffic Management Systems)	Closed circuit television cameras	EA	4
TMS (Traffic Management Systems)	Extinguishable message signs	EA	1
Operational Improvement	Intersection / Signal improvements	EA	2
TMS (Traffic Management Systems)	Changeable message signs	EA	2
Operational Improvement	Ramp modifications	EA	1
TMS (Traffic Management Systems)	Communications (fiber optics)	Miles	8.6

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

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Date 10/03/2025 07:33:04

Additional Information

Under "Performance Indicators and Measures" Section, several optional metrics were shown as required in the electronic form, and in order to complete the form without errors, we included "dummy" values, such as the VMT/Capita, and the "Peak Period Travel Time Reliability Index" values, as the electronic form does not allow users to enter "N/A".

PPR ID
ePPR-6160-2024-0001 v1

Performance Indicators and Measures						
Measure	**Required For**	**Indicator/Measure**	**Unit**	**Build**	**Future No Build**	**Change**
Performance Indicators and Measures						
Measure	**Required For**	**Indicator/Measure**	**Unit**	**Build**	**Future No Build**	**Change**
Congestion Reduction	LPPC, SCCP, LPPF	Change in Daily Vehicle Miles Travelled	Miles	463,943	480,875	-16,932
			VMT per Capita	463,943	480,875	-16,932
	LPPC, SCCP, LPPF	Person Hours of Travel Time Saved (Only 'Change' required)	Person Hours	11,567	47,048	-35,481
			Hours per Capita	11,567	47,048	-35,481
	TCEP	Change in Daily Vehicle Hours of Delay	Hours	8,579	35,748	-27,169
	TCEP	Change in Daily Truck Hours of Delay	Hours	189	786	-597
Throughput (Freight)	TCEP	Change in Truck Volume	# of Trucks	895,325	895,325	0
	TCEP	Change in Rail Volume	# of Trailers	0	0	0
			# of Containers	0	0	0
System Reliability (Freight)	LPPC, SCCP, LPPF	Peak Period Travel Time Reliability Index (Only 'No Build' Required)	Index	1.96	1.96	0
	LPPC, SCCP, LPPF	Level of Transit Delay (if required)	% "On-time"	0	0	0
Velocity (Freight)	TCEP	Travel Time or Total Cargo Transport Time	Hours	368,196	523,603	-155,407
Air Quality & GHG (only 'Change' required)	LPPC, SCCP, TCEP, LPPF	Particulate Matter	PM 2.5 Tons	0.161	0.27	-0.109
			PM 10 Tons	0.173	0.292	-0.119
	LPPC, SCCP, TCEP, LPPF	Carbon Dioxide (CO2)	Tons	15,982	23,615	-7,633
	LPPC, SCCP, TCEP, LPPF	Volatile Organic Compounds (VOC)	Tons	2.937	4.214	-1.277
	LPPC, SCCP, TCEP, LPPF	Sulphur Dioxides (SOx)	Tons	0.157	0.233	-0.076
	LPPC, SCCP, TCEP, LPPF	Carbon Monoxide (CO)	Tons	60.16	66.75	-6.59
	LPPC, SCCP, TCEP, LPPF	Nitrogen Oxides (NOx)	Tons	5.773	6.691	-0.918
Safety	LPPC, SCCP, TCEP, LPPF	Number of Fatalities	Number	0.61	0.62	-0.01
	LPPC, SCCP, TCEP, LPPF	Fatalities per 100 Million VMT	Number	0.8	0.82	-0.02
	LPPC, SCCP, TCEP, LPPF	Number of Serious Injuries	Number	1.49	1.53	-0.04
	LPPC, SCCP, TCEP, LPPF	Number of Serious Injuries per 100 Million VMT	Number	1.96	2.01	-0.05
Economic Development	LPPC, SCCP, TCEP, LPPF	Jobs Created (Only 'Build' Required)	Number	2,351	0	2,351
Cost Effectiveness (only 'Change' required)	LPPC, SCCP, TCEP, LPPF	Cost Benefit Ratio	Ratio	5.3	0	5.3

PPR ID
ePPR-6160-2024-0001 v1

Performance Indicators and Measures						
Measure	**Required For**	**Indicator/Measure**	**Unit**	**Build**	**Future No Build**	**Change**
Vehicle Volume	LPPC, LPPF, SCCP	Existing Average Annual Vehicle Volume on Project Segment	Number	7,410,960	7,410,960	0
	LPPC, LPPF, SCCP	Estimated Year 20 Average Annual Vehicle Volume on Project Segment with Project	Number	8,603,894	8,603,894	0

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6160-2024-0001 v1

District	County	Route	EA	Project ID	PPNO
04	Sonoma County, Solano County, Sonoma County	37, 37, 121	1Q761	0419000255	5202A

Project Title

State Route 37 Sears Point to Mare Island Improvement Project Phase 2

Existing Total Project Cost ($1,000s)									
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Implementing Agency
E&P (PA&ED)	4,000							4,000	MTC-SAFE
PS&E	16,000							16,000	Caltrans HQ
R/W SUP (CT)	500							500	Caltrans HQ
CON SUP (CT)					25,000			25,000	Caltrans HQ
R/W					39,500			39,500	Caltrans HQ
CON					166,000			166,000	Caltrans HQ
TOTAL	20,500				230,500			251,000	
Proposed Total Project Cost ($1,000s)									Notes
E&P (PA&ED)	4,000							4,000	
PS&E	16,000							16,000	
R/W SUP (CT)	500							500	
CON SUP (CT)					25,000			25,000	
R/W					39,500			39,500	
CON					166,000			166,000	
TOTAL	20,500				230,500			251,000	

Fund #1:	Other State - Surface Transportation Program (Committed)								Program Code
Existing Funding ($1,000s)									20.30.207.811
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									Caltrans HQ
PS&E	7,500							7,500	NHPP funds
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	7,500							7,500	
Proposed Funding ($1,000s)									Notes
E&P (PA&ED)									
PS&E	7,500							7,500	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	7,500							7,500	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6160-2024-0001 v1

Fund #2:	Local Funds - Bridge Tolls Rehab (Committed)								Program Code
	Existing Funding ($1,000s)								20.10.400.100
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)	4,000							4,000	MTC-SAFE
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	4,000							4,000	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)	4,000							4,000	
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	4,000							4,000	
Fund #3:	Other State - SB 170 (Committed)								Program Code
	Existing Funding ($1,000s)								20.30.207.811
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									MTC-SAFE
PS&E	3,000							3,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	3,000							3,000	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E	3,000							3,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	3,000							3,000	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6160-2024-0001 v1

Fund #4:	Local Funds - Regional Measure 3 (Committed)								Program Code
	Existing Funding ($1,000s)								20.10.400.100
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									MTC-SAFE
PS&E	5,500							5,500	
R/W SUP (CT)									
CON SUP (CT)					6,900			6,900	
R/W					500			500	
CON					23,100			23,100	
TOTAL	5,500				30,500			36,000	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E	5,500							5,500	
R/W SUP (CT)									
CON SUP (CT)					6,900			6,900	
R/W					500			500	
CON					23,100			23,100	
TOTAL	5,500				30,500			36,000	

Fund #5:	Other Fed - OBAG3 (Committed)								Program Code
	Existing Funding ($1,000s)								20.30.010.300
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									MTC-SAFE
PS&E									
R/W SUP (CT)	500							500	
CON SUP (CT)									
R/W									
CON									
TOTAL	500							500	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)	500							500	
CON SUP (CT)									
R/W									
CON									
TOTAL	500							500	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6160-2024-0001 v1

Fund #6:	Other Fed - PROTECT (Committed)								Program Code
	Existing Funding ($1,000s)								20.30.010.300
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									MTC-SAFE
PS&E									This $20 million funding is currently included in Phase 2 of the project. MTC and Caltrans are also exploring with the US DOT the possibility moving those funds and scope to be delivered in Phase 1.
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 #7:	Local Funds - SR 37 Toll Financing (Committed)								Program Code
	Existing Funding ($1,000s)								20.10.400.100
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									MTC-SAFE
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W					39,000			39,000	
CON					19,700			19,700	
TOTAL					58,700			58,700	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W					39,000			39,000	
CON					19,700			19,700	
TOTAL					58,700			58,700	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6160-2024-0001 v1

Fund #8:	Other State - Future Funds (Committed)								Program Code
	Existing Funding ($1,000s)								SHOPP
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)					3,100			3,100	
R/W									
CON					20,200			20,200	
TOTAL					23,300			23,300	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)					3,100			3,100	
R/W									
CON					20,200			20,200	
TOTAL					23,300			23,300	

Fund #9:	State SB1 TCEP - TCEP State (Committed)								Program Code
	Existing Funding ($1,000s)								20.XX.723.100
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									
PS&E									TCEP State Share Program Code: 20.xx.723.100
R/W SUP (CT)									
CON SUP (CT)					6,000			6,000	
R/W									
CON					23,200			23,200	
TOTAL					29,200			29,200	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)					6,000			6,000	
R/W									
CON					23,200			23,200	
TOTAL					29,200			29,200	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6160-2024-0001 v1

Fund #10:	State SB1 TCEP - Trade Corridors Enhancement Account (Committed)								Program Code
	Existing Funding ($1,000s)								20.XX.723.200
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									
PS&E									TCEP Regional Share Program Code: 20.XX.723.200.
R/W SUP (CT)									
CON SUP (CT)					9,000			9,000	
R/W									
CON					34,800			34,800	
TOTAL					43,800			43,800	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)					9,000			9,000	
R/W									
CON					34,800			34,800	
TOTAL					43,800			43,800	

Fund #11:	Local Funds - Other Local Funds (Committed)								Program Code
	Existing Funding ($1,000s)								20.10.400.100
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON					25,000			25,000	
TOTAL					25,000			25,000	
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON					25,000			25,000	
TOTAL					25,000			25,000	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6160-2024-0001 v1

Fund #12:	SB1 TCEP - Trade Corridors Enhancement Account (Committed)								Program Code
Existing Funding ($1,000s)									20.30.210.310
Component	Prior	23-24	24-25	25-26	26-27	27-28	28-29+	Total	Funding Agency
E&P (PA&ED)									
PS&E									TCEP funding are shown in separate line items under “State SB1 TCEP - TCEP State” and “State SB1 TCEP - TCEP Regional”.
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding ($1,000s)									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6160-2024-0001 v1

Complete this page for amendments only

Date 10/03/2025 07:33:04

District	County	Route	EA	Project ID	PPNO
04	Sonoma County, Solano County, Sonoma County	37, 37, 121	1Q761	0419000255	5202A

SECTION 1 - All Projects

Project Background

In Sonoma, Napa, and Solano Counties on State Route 37 from 1.0 mile west of State Route 121 at Sears Point to Napa River Bridge in Vallejo. The Project will promote higher vehicle occupancy and support multimodal travel, reduce traffic delays, introduce new micro-transit/vanpool, increase freight throughput, improve safety, preserve and protect surrounding ecosystems, and improve corridor resilience against flooding. Phase 2 improvements will convert the existing eastbound (EB) lane to a high-occupancy vehicle (HOV) lane, add one additional lane as a new tolled lane in the EB direction, raise the profile grade at the locations most vulnerable to flooding, widen Sonoma Creek Bridge and add a bike detection system to allow safe passage for bicyclists, relocate/raise equipment to improve resiliency, provide tolling infrastructure, intelligent transportation system, highway patrol observational areas, lighting and signage, and implement public access improvements.

Programming Change Requested

Reason for Proposed Change

Update project schedule.

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

Schedule for State Route 37 Sears Point to Mare Island Improvement Project Phase 2 (Construction Package 2) was updated due to delay in performing extensive analysis of all built alternatives, not only preferred alternative, from the Environmental Document, as required by the US Army Corps Individual Permit.

Other Significant Information

SECTION 2 - For SB1 Project Only

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

Project amendment to incorporate schedule updates. Please refer to attached memo dated on September 24, 2025, subject: DOCUMENT TO UPDATE SCHEDULE FOR SB-1 BASELINE OF PROJECT 04-1Q761: State Route 37 Sears Point to Mare Island Improvement Project Phase 2".

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

Fact Sheet

SB1 TCEP Baseline Agreement
EA 1Q761, Project ID: 0419000255
State Route 37 Sears Point to Mare Island Improvement Project Phase 2

Project Title:	State Route 37 Sears Point to Mare Island Improvement Project Phase 2

Location:	SON/ SOL-37-PM 2.4/R6.20, R0.0/8.5; SON-121-PM 0.0/0.2
Project Description:	In Sonoma, Napa, and Solano Counties, from 0.30 miles East of Lakeview Highway to 0.25 miles East of Sacramento Ave, Eastbound (EB) improvements to State Route 37.
Work Description:	This project will improve peak period delay in the eastbound (EB) direction by providing new infrastructure features, including adding one additional lane as a tolled lane and converting the existing lane to a high-occupancy vehicle (HOV) lane, and supporting programs that will incentivize HOV and transit use. The Project will also implement climate-adaptation features that prevent or minimize the impact of flooding, improving the resiliency of this vital freight corridor. Notably the Project will enhance the abutting Strip Marsh East (SME), which is rapidly degrading due to poor drainage.
Project Schedule: ***Milestone Dates***	PA&ED (M200): 02/09/2023 Right of Way Cert (M410): 12/01/2026 Ready to List (M460): 01/04/2027 Approve Contract: (M500): 08/26/2027
Project Cost:	Total Cost (all phases): $251 Million Construction Capital: $166 Million
Purpose and Need:	The purpose of the Project is to improve traffic flow and peak travel times and increase vehicle occupancy (number of people moved per vehicle) in the SR 37 corridor between SR 121 and the Mare Island interchange.

	The Project is needed to address recurring congestion in the near term on SR 37, where the highway narrows to one lane in each direction between SR 121 and the Mare Island interchange. Capacity and merging constraints at present result in traffic queueing at the SR 37 / SR 121 intersection. Current demand and anticipated future transportation demand contribute to the need for this Project.

Memorandum

To: SUDHA KODALI
Office Chief
Office of Capital Improvement Programming
Division of Financial Programming

Date: September 24, 2025

File: EA 04-1Q761 (0419000255)
PPNO 5202A
SON/ SOL-37-PM 2.4/R6.20, R0.0/8.5
SON-121-PM 0.0/0.2

From: RUI "RICKY" GAO
District 4 Division Chief
Program/Project Management- SR-37

Subject: **DOCUMENT TO UPDATE SCHEDULE FOR SB-1 BASELINE OF PROJECT 04-1Q761: State Route 37 Sears Point to Mare Island Improvement Project Phase 2**

The purpose of this memorandum is to document the updated project schedule.

Background and History
The parent project was split into three Construction Packages (Phases) after the Project Report was approved in February 2023:

- Construction Package 1 (Phase 1): Tolay Creek Bridge Replacement and SR 37/121 intersection improvement. EA 1Q763. 0423000256
- Construction Package 2 (Phase 2). Eastbound HOV widening and Strip Mash East ecological enhancement. EA 1Q761. 0419000255
- Construction Package 3 (Phase 3). Westbound HOV widening. EA 1Q764. 0425000105

Project Description
SB1 Cycle 4 TCEP funds were adopted in June 2025 for State Route 37 Sears Point to Mare Island Improvement Project Phase 2 (Construction Package 2) and the project description is as follows:

Phase 2 improvements will convert the existing eastbound (EB) lane to a high-occupancy vehicle (HOV) lane, add one additional lane as a new tolled lane in the EB direction, raise the profile grade at the locations most vulnerable to flooding, widen Sonoma Creek Bridge and add a bike detection system to allow safe passage for bicyclists, relocate/raise equipment to improve resiliency, provide tolling infrastructure, intelligent transportation system, highway patrol observational areas, lighting and signage, and implement public access improvements.

Schedule Update

Schedule for State Route 37 Sears Point to Mare Island Improvement Project Phase 2 (Construction Package 2) was updated due to delay in performing extensive analysis of all built alternatives from the Environmental Document as required by the US Army Corps Individual Permit.

Project Milestones	Existing	Proposed
Project Study Report	12/28/2018	12/28/2018
Begin Environmental (PA&ED) Phase	07/22/2020	07/22/2020
Circulate Draft Environmental Document Document Type: EIR	01/13/2022	01/13/2022
Draft Project Report	12/31/2021	12/31/2021
End Environmental Phase (PA&ED Milestone)	02/09/2023	02/09/2023
Begin Design (PS&E) Phase	05/31/2023	05/31/2023
End Design Phase (Ready to List Advertisement Milestone)	07/03/2026	01/04/2027
Begin Right of Way Phase	05/31/2023	05/31/2023
End Right of Way Phase	07/01/2026	12/01/2026
Begin Construct Phase (Contract Award Milestone)	12/07/2026	08/26/2027
End Construction Phase (Construction Contract Acceptance Milestone)	05/15/2029	11/15/2029
Begin Closeout Phase	05/16/2029	11/16/2029
End Closeout Phase (Closeout Report)	11/15/2030	05/15/2031

Funding/Programming:

Below is the funding plan for State Route 37 Sears Point to Mare Island Improvement Project Phase 2 (Construction Package 2). No update at this time.

Fund Source	Fiscal Year Estimate			
	Prior	2025/26	2026/2027	Total
Component	In thousands of dollars ($1,000)			
PA&ED Support	$4,000			$4,000
PS&E Support	$16,000			$16,000
Right of Way Support	$500			$500
Construction Support			$25,000	$25,000
Right of Way Capital			$39,500	$39,500
Construction Capital			$166,000	$166,000
Total	$20,500		$230,500	$251,000

APPROVAL RECOMMENDED

Kevin Chen 9/25/2025

Kevin Chen Date
Assistant Director
Metropolitan Transportation Commission

09/25/2025

Javier Mendivil Date
Regional Project Manager
Div. of Program/Project
Management - SR 37

APPROVED

9/25/2025

Ricky Gao Date
District Division Chief
Div. of Program/Project
Management - SR 37

Attachment 3. Performance Metrics Form

Trade Corridor Enhancement Program

Existing Average Annual Vehicle Volume on Project Segment	7,410,960
Existing Average Annual Truck Percent on Project Segment	10%
Estimated Year 20 Average Annual Vehicle Volume on Project Segment with Project	8,603,894
Estimated Year 20 Average Annual Truck Percent on Project Segment with Project	10%

Measure	**Metric**	**Project Type**	**Build**	**Future No Build**	**Change**	**Increase/ Decrease**
Congestion Reduction (Freight)	Change in Daily Vehicle Hours of Delay	All	8,579	35,748	-27,169	Decrease
	Change in Daily Truck Hours of Delay	All (except rail)	189	786	-597	Decrease
	(Optional) Person Hours of Travel Time Saved	All	11,567	47,048	-35,481	Decrease
	(Optional) Daily Truck Trips Due to Mode Shift	Rail, Sea Port	n/a			
	(Optional) Daily Truck Miles Travelled Due to Mode Shift	Rail, Sea Port	n/a			
	(Optional) Other Information	All				
Throughput (Freight)	Change in Truck Volume	Highway, road, and port projects only	895,325	895,325	o	No change
	Change in Rail Volume	Rail	n/a			

	(Optional) Change in Cargo Volume	Sea port, airport	n/a			
	(Optional) Other Information	All				
System Reliability (Freight)	Truck Travel Time Reliability Index ("No Build" Only) (Optional Metric)	National and State Highway System Only				
	(Optional) Other Information	All				
Velocity (Freight)	Travel time or total cargo transport time	All	368,196	523,603	-155,407	Decrease
	(Optional) Change in Average Peak Period Weekday Speed for Road Facility	Road				
	(Optional) Average Peak Period Weekday Speed for Rail Facility	Rail				
	(Optional) Other Information	All				
Air Quality	Particulate Matter (PM 10)	All	0.173	0.292	-0.119	Decrease
	Particulate Matter (PM 2.5)		0.161	0.27	-0.109	Decrease
	Carbon Oxide (CO2)		15,982	23,615	-7,633	Decrease
	Volatile Organic Compounds (VOC)		2.937	4.214	-1.277	Decrease
	Sulphur Oxides (SOx)		0.157	0.233	-0.076	Decrease
	Carbon Monoxide (CO)		60.16	66.75	-6.59	Decrease
	Nitrogen Oxides (NOx)		5.773	6.691	-0.918	Decrease
Safety	Number of Fatalities	Road and Land Port	0.61	0.62	-0.01	Decrease
	Rate of Fatalities per 100 Million VMT		0.8	0.82	-0.02	Decrease

	Number of Serious Injuries		1.49	1.53	-0.04	Decrease
	Number of Serious Injuries per 100 Million VMT		1.96	2.01	-0.05	Decrease
	(Optional) Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries					
	(Optional) Other Information	All				
Cost Effectiveness	Cost Benefit Ratio	All	5.3			
	(Optional) Other Information	All				
Economic Development	Jobs Created	All	2,351			
	(Optional) Other Information	All				

04 - Son - 37 – PM 2.9/6.2
Sol - 37 – PM 0.0/R7.4
04 - Son - 121 – PM 0.0/0.2
EA 04-1Q761 – Project Number 0419000255
February/2023

Project Report

For Project Approval

On Route 37

Between 1.0 mile west of SR 37/SR 121 intersection

And 0.25 mile east of Mare Island interchange

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:

Julie McDaniel, Deputy District Director,
Right of Way and Land Surveys

APPROVAL RECOMMENDED:

Ahmed Rahid, Acting Regional Project Manager

Kevin Chen

Kevin Chen, Project Manager
Metropolitan Transportation Commission

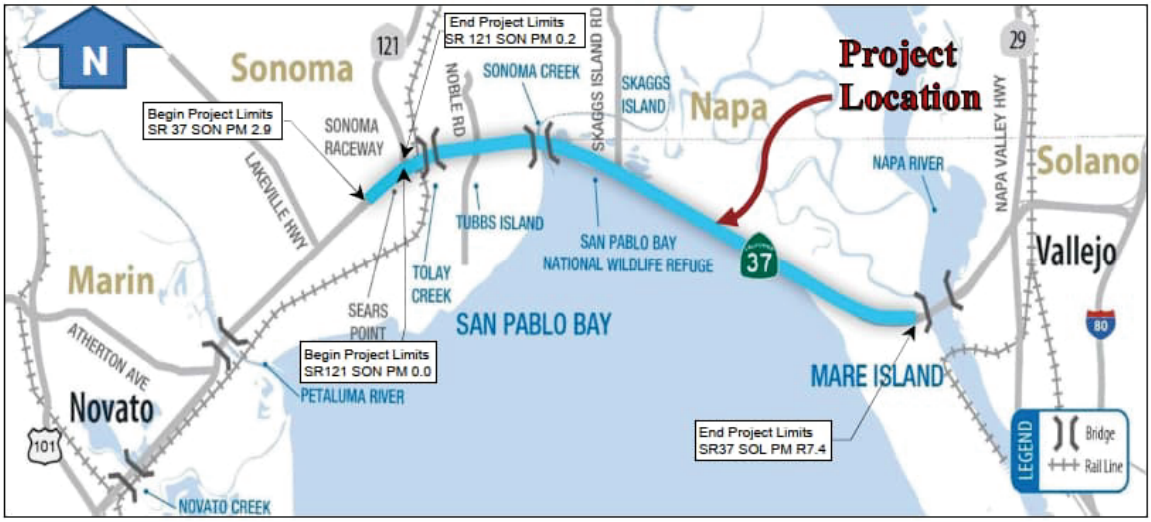
PROJECT APPROVED:

Helena (Lenka) Culik-Caro,
Deputy District Director,
District 4 Division of Design

February 8, 2023

Date

Vicinity 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 on which the recommendations, conclusions, and decisions are based.

Joy P. Villafranca

02/03/2023

JOY P. VILLAFRANCA,
REGISTERED CIVIL ENGINEER

DATE

Table of Contents

List of Attachments

List of Tables

Acronyms and Abbreviations

ADL	aerially deposited lead
Alt	Alternative
APE	Area of Potential Effects
AQCTF	Air Quality Conformity Task Force
BATA	Bay Area Toll Authority
BCDC	San Francisco Bay Conservation and Development Commission
bgs	below ground surface
BMP	Best Management Practice
BPAC	Bicycle and Pedestrian Advisory Committee
BSA	Biological Study Area
BTU	British thermal units
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGP	Construction General Permit
CHP	California Highway Patrol
CMF	Crash Modification Factor
CMS	Changeable Message Sign
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CTC	California Transportation Commission
CTP 2040	*California Transportation Plan 2040*
DED	Draft Environmental Document
DEIR	Draft Environmental Impact Report
DPR	Draft Project Report
DPS	Distinct Population Segment
DSA	Disturbed Soil Area
DWR	Department of Water Resources
EA	Environmental Assessment
EB	eastbound
EIR	Environmental Impact Report
ESU	Evolutionarily Significant Unit
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration

FIRM	Flood Insurance Rate Map
GHG	greenhouse gas
HDM	Highway Design Manual (Caltrans)
HMA-A	Hot Mix Asphalt–Type A
HMA-O	Hot Mix Asphalt–Open Graded Friction Course
HOV	High Occupancy Vehicle
HSM	Highway Safety Manual
I-80	Interstate 80
I-580	Interstate 580
IRRS	Interregional Road System
kV	kilovolt
LCCA	Life-Cycle Cost Analysis
LOS	Level of Service
MGS	Midwest Guardrail System
MMB	Movable Median Barrier
MOE	Measure of Effectiveness
mph	mile(s) per hour
MS4	Municipal Separate Storm Sewer System
MTC	Metropolitan Transportation Commission
NAAQS	National Ambient Air Quality Standards
NAVD88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOC	Notice of Completion
NPDES	National Pollutant Discharge Elimination System
NSR	Noise Study Report
NVTA	Napa Valley Transportation Authority
NWR	National Wildlife Refuge
OPC	Ocean Protection Council
ORT	Open Road Tolling
PA&ED	Project Approval and Environmental Document
PBA	Plan Bay Area
PDT	Project Development Team
PEL	State Route 37 Corridor Ultimate Project Planning and Environmental Linkages
PG&E	Pacific Gas and Electric Company

PM	post mile(s)
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
POAQC	Project of Air Quality Concern
Project	SR 37 Sears Point to Mare Island Improvement Project
PS&E	Plans, Specifications, and Estimate
PSI	Preliminary Site Investigation
PSR-PDS	Project Study Report–Project Development Support
RM3	Regional Measure 3
RTP	Regional Transportation Plan
RTP ID	Regional Transportation Plan identification number
RWQCB	Regional Water Quality Control Board
SB	southbound, Senate Bill
SCS	Sustainable Communities Strategy
SCTA	Sonoma County Transportation Authority
SHOPP	State Highway Operation and Protection Program
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLR	sea level rise
SMART	Sonoma-Marin Area Rail Transit
Sol	Solano County
Son	Sonoma County
SOV	Single-Occupancy Vehicle
SP&R	State Planning and Research
SPF	Safety Performance Function
SR	State Route
STA	Solano Transportation Authority
State	State of California
SWDR	Stormwater Data Report
SWPPP	Storm Water Pollution Prevention Plan
TAC	Technical Advisory Committee
TAM	Transportation Authority of Marin
TASAS-TSN	Traffic Accident Surveillance and Analysis System–Traffic System Network
TCE	temporary construction easement
TCR	Transportation Concept Report
TI	Traffic Index
TIMS	Transportation Injury Mapping System
TIP	Transportation Improvement Program
TM1	Travel Model One
TMP	Transportation Management Plan
TNM	Traffic Noise Model

TOAR	Traffic Operations Analysis Report
TOS	Traffic Operation Systems
TWSC	two-way stop controlled
UC Davis	University of California, Davis
US 101	United States Highway 101
USACE	US Army Corps of Engineers
USCG	US Coast Guard
USFWS	US Fish and Wildlife Service
USPS	US Postal Service
VFWD	Vallejo Flood and Wastewater District
VHD	vehicle hours of delay
VHT	vehicle hours traveled
VMT	vehicle-miles traveled
vph	vehicles per hour
WB	westbound
WPCP	Water Pollution Control Program

1. INTRODUCTION

California State Route (SR) 37 extends from United States Highway 101 (US 101) in Novato, Marin County, to Interstate 80 (I-80) in Vallejo, Solano County (Sol). SR 37 is an important regional connection that links the north, east, and west San Francisco Bay sub-regions. It serves commute, freight, and recreational traffic on weekdays and weekends. The SR 37 corridor currently experiences severe traffic congestion, with extensive delays in the morning and evening weekday peak traffic periods and on weekends.

Between US 101 and SR 121, SR 37 is a four-lane expressway. It transitions to a two-lane conventional highway between SR 121 and the Mare Island interchange. East of the Mare Island interchange, SR 37 is a four-lane freeway facility. This project focuses on the portion of SR 37 that has a traffic capacity need, where it transitions from four lanes to two lanes (between approximately SR 121 and the Mare Island interchange). Attachment A shows the location of the proposed project, which extends for approximately 10 miles along SR 37 from post mile (PM) 2.9 to PM 6.2 in Sonoma County (Son) and from PM 0.0 to PM R7.4 in Solano County, and for approximately 0.2 mile along SR 121 from PM 0.0 to 0.2 in Sonoma County.

The California Department of Transportation (Caltrans), in cooperation with partner agencies Metropolitan Transportation Commission (MTC), Sonoma County Transportation Authority (SCTA), Solano Transportation Authority (STA), Napa Valley Transportation Authority (NVTA), and Transportation Authority of Marin (TAM), proposes to construct the SR 37 Sears Point to Mare Island Improvement Project (the Project). The purpose of the Project is to improve traffic flow and peak travel times and increase vehicle occupancy (number of people moved per vehicle) in the travel corridor between SR 121 and the Mare Island interchange. Three Build Alternatives and one No-Build Alternative were rejected. The Project will involve pavement widening for one or two new High Occupancy Vehicle (HOV) lanes, median barrier reconstruction, installation of railing at the edge of shoulders, widening of Tolay Creek Bridge and Sonoma Creek Bridge, signalization at the SR 37 / Noble Road intersection, widening of eastbound (EB) SR 37 west of SR 121 to provide a new EB HOV lane, bank protection and fill prism stabilization, new overhead signs, roadside signs, and lane restriping. No work at the Walnut Avenue Overcrossing is anticipated. The added lanes would be for general purpose use (one new lane in each direction between SR 121 and the Walnut Avenue Overcrossing at Mare Island). The project includes the installation and operation of Open Road Tolling (ORT) on the new general purpose lanes. The existing lanes within this same segment would be converted to HOV lanes, and operate as HOV lanes 24 hours/day, 7 days a week. As the new general purpose lane is to be tolled at all times, the HOV lane operational hours is to be enforced at all times, to be consistent, which would also incentivize the use of carpooling and bus transit. The project will include advanced signing.

The Project is to improve traffic flow and peak travel times and increase vehicle occupancy (number of people moved per vehicle) in the SR 37 corridor. It proposes improvements at the existing roadway elevation to provide additional capacity during peak periods to improve traffic flow while minimizing environmental impacts. However, the Project does not address sea level rise (SLR). A future project, one that is commonly referred to as the Resilient 37 Project, will construct a new four-lane elevated facility built partly on fill and/or a causeway.

The Resilient 37 Project currently being studied would address long-term resiliency to SLR and flooding and would serve to further improve traffic flow and provide multimodal facilities and ecological and hydrologic enhancements to facilitate adaptation of the corridor to SLR.

Caltrans completed the State Route 37 Corridor Planning and Environmental Linkages (PEL) Study (US 101 to I-80) in the December 2022, which was a comprehensive long-range study to identify the best solutions to address the corridor's deficiencies, considering the corridor's needs and the very high environmental sensitivity of the area. The preferred alternative, identified by the process to date as the route that best balances concerns regarding project design, traffic, and the environment, is primarily a raised causeway located within/near the existing SR37 corridor. The PEL Study Report includes a detailed implementation plan that will help transition into the PA&ED phase. After the completion of the PEL study, Caltrans will initiate the environmental review process as the California Environmental Quality Act (CEQA) / National Environmental Policy Act (NEPA) lead agency. Depending on availability of funds, the Resilient 37 Projects may be constructed as early as 2035. Funding sources for the Resilient 37 Projects are yet to be identified. It is expected that a phased implementation will be undertaken and a combination of federal, State of California (State), and regional funds will be needed.

The SR37 PEL Study Report provided an implementation plan for potential phasing of the study's Preferred Alternative and the project sections are listed below. The numbering of these sections is from west to east and should not be construed as a proposed order of construction, but a preliminary and flexible framework to transition from the PEL to the PA&ED phase. The Project is located within Sections 5, 6, and 7.

1. **US 101/SR 37 Interchange**: This interchange currently connects at-grade portions of US 101 to at-grade portions of SR 37. In order to connect to the proposed causeway in Section 2, modifications to this interchange will be required.

2. **US 101 to Atherton Avenue:** This section will help address current flooding issues at Novato Creek by converting existing at-grade sections to a raised causeway.

3. **Atherton Avenue to Petaluma River:** At present, this section rises up to about 75 feet above sea level and accordingly can more readily connect with adjacent elevated portions to the west (causeway to be constructed) and the east (the Petaluma River Bridge).

4. **Petaluma River Bridge to East of San Pablo Bay NWR Headquarters:** This will be a causeway section that runs between an existing point of higher elevation (the Petaluma River Bridge on the west) and a point east of the entrance to the San Pablo Bay NWR Headquarters (2100 Sears Point Road).

5. **NWR Headquarters to SR 37/SR 121 Interchange (Sears Point)**: Section 5 is anticipated to be a long stretch of at-grade roadway with portions on embankment connecting on the west to the causeway of Section 4 and on the east to the existing

low ridge (about 100 feet above sea level) immediately west of the SR 37/SR 121 intersection.

6. **SR 37/SR 121 Interchange (Sears Point)**: Section 6 is a critical piece that must not only connect to the new embankment stretch to the west but also to the proposed new causeway to the east (Segment 7). Similar to Section 1, this project would be an interchange project to improve traffic operations between SR 37 and SR 121.

7. **SR 37/SR 121 Interchange (Sears Point) to Walnut Avenue, Mare Island:** Section 7 would be a long stretch of causeway, running east from the SR 37/SR 121 interchange to the Walnut Avenue interchange. This interchange is where the existing SR 37 transitions from at grade to the Napa River Bridge.

8. **SR 37/Walnut Avenue Interchange at Mare Island to I-80:** At the Walnut Avenue interchange, the proposed causeway to the west would connect with the existing higher-elevation Napa River Bridge. Approaching the SR 29 intersection, existing SR 37 rises to existing structures with a lane configuration similar to the preferred alternative. As SR 37 approaches I-80, its elevation is greater than 100 feet above sea level and adaptation to sea level rise is not as important.

Taking this into consideration, this Project is being developed for a 20-year design life, excluding any bridge widening, which will be developed to current bridge design standards. The design life was agreed on by the Project Development Team (PDT) during the August 12, 2021, PDT meeting.

Caltrans, as assigned by the Federal Highway Administration (FHWA), is the lead agency under NEPA. Caltrans is also the lead agency under CEQA.

Table 1-1 lists some of the key characteristics of the Project.

Table 1-1: Project Characteristics

Project Limits	04-Son-37–PM 2.9/6.2 04-Sol-37–PM 0.0/R7.4 04-Son-121–PM 0.0/0.2	
	Current Cost Estimate:	**Escalated Cost Estimate:**
Capital Outlay Support	$71.0 million	$71.0 million
Capital Outlay Construction	$249.3 million	$291.8 million
Capital Outlay Right of Way	$67.0 million	$67.0 million
Funding Source	Local, State, and federal funding sources	
Funding Year	2025/26 for construction	
Type of Facility	Four-lane conventional highway	
Number of Structures	Two	
Environmental Determination or Document	Environmental Impact Report (CEQA) / Environmental Assessment (NEPA)	

Legal Description	In Sonoma and Solano Counties on Route 37 from 1.0 mile west of Route 121 to Napa River Bridge in Vallejo and on Route 121 from Route 37 to 0.2 mile north of Route 37
Project Development Category	Category 4A

Notes:
CEQA = California Environmental Quality Act
NEPA = National Environmental Policy Act
PM = post mile(s)
Sol = Solano County
Son = Sonoma County

2. RECOMMENDATION

The PDT identified Alternative 3B: Widen to Four Full-Time Lanes with 8-Foot Shoulders, Begin Eastbound HOV Lane on the Left Side West of SR 121, Widen Tolay Creek and Sonoma Creek Bridges, and Provide Improvements at Three Intersections as the Preferred Alternative. This decision was made at the April 21, 2022, PDT meeting after considering the information in the Draft Environmental Impact Report (DEIR), technical studies, comments received from the public and outside agencies during the public comment period, and discussion and input from the PDT members.

It is recommended that this Project Report be approved and that authorization be granted for the project to proceed to final engineering and the preparation of plans, specifications, and estimates utilizing Alternative 3B. The affected local agencies were invited, participated, and consulted throughout the PDT process with respect to the recommended plan. Their views have been considered, and these local agencies are in general accord with the plan presented.

3. BACKGROUND

Project History and Other Corridor Projects

The SR 37 corridor has been the subject of several studies related to SLR and traffic congestion. These studies include the Highway 37 Stewardship Study (July 2013), the State Route 37 Integrated Traffic, Infrastructure, and Sea Level Rise Analysis (University of California, Davis [UC Davis], Study [February 2016]), and the Caltrans Transportation Concept Report (TCR) (2015). These studies and the SR 37 Corridor Plan identified SR 37 between SR 121 and the Mare Island interchange as a priority segment for capacity enhancement to close the gap between the two four-lane segments on either end and to address the vulnerability and risks associated with SLR and flooding, public safety, transit routes, recreational activities, economic impacts on commuters, and transport of goods.

In December 2018, a Project Study Report–Project Development Support (PSR-PDS) report was approved that included the following scenarios:

- No-Build Alternative
- Interim Build Alternatives (hereafter referred to as the State Route 37 Sears Point to Mare Island Improvement Project)

  - Three-lane Movable Median Barrier (MMB)
  - Shoulder Conversion to Travel Lane during Peak Hour
- Ultimate Build Alternatives (hereafter referred to as the Resilient 37 Project)
  - Hybrid: Construct a raised roadway that is above the project SLR elevation, with some segments on an embankment and other segments on a viaduct causeway.
  - Causeway: Construct a raised roadway that is above the project SLR elevation, with segments that are primarily on a viaduct causeway.

The State Route 37 Sears Point to Mare Island Improvement Project and the Resilient 37 Project were identified in the PSR-PDS report as separate projects based on each project's individual purpose and need, priority, and lead time to gain funding to proceed.

The Project is to improve traffic flow and peak travel times and increase vehicle occupancy (number of people moved per vehicle) in the SR 37 corridor. The regular four-lane facility with the HOV / managed lanes alternative was included during the Project Approval and Environmental Document (PA&ED) phase as a variation of the Shoulder Conversion to Travel Lane during Peak Hour alternative.

A future project, one that is commonly referred to as the Resilient 37 Project, will construct a new four-lane elevated facility built partly on fill and/or a causeway. The Resilient 37 Project currently being studied would address long-term resiliency to SLR and flooding and would serve to further improve traffic flow and provide multimodal facilities and ecological and hydrologic enhancements to facilitate adaptation of the corridor to SLR. The PEL study recommended the use of the existing corridor for the Resilient 37 project alignment.

The future Resilient 37 Project will construct a new four-lane elevated facility built partly on fill and/or a causeway. This project will improve traffic conditions, address the resilience of the corridor with respect to SLR and flooding, and provide ecological and hydrologic enhancements. The future Resilient 37 Project that addresses SLR requires a substantial long-term investment to fund the reconstruction of the highway's vertical profile to improve hydrologic connectivity with San Francisco Bay. The anticipated multiple years of construction needed to build a project that addresses SLR means that SR 37 must remain in place and intact until completion of the improvements that would raise the highway. SR 37 must continue to operate along this corridor, which will largely not be interrupted during this long-term construction.

Community Interaction

Public Outreach

Formal public involvement in the proposed project began in 2020. On July 10, 2020, Caltrans filed the CEQA Notice of Preparation with the State Clearinghouse and initiated the public scoping period for the proposed project. Notice of the public scoping period and a virtual public scoping meeting was posted on the Caltrans website (https://dot.ca.gov/caltrans-near-

me/district-4/d4-projects/d4-37-corridor-projects); through newspaper advertisements in the *Marin Independent*, *Napa Valley Register*, *Santa Rosa Press Democrat*, and *Vallejo Times Herald*; by postcard, including a Spanish-language postcards that instructed readers to contact Caltrans to request language translation, to approximately 3,000 addresses; by a flyer mailed and emailed to over 205 recipients, including federal, State, and local agencies; and by a Caltrans press release. The virtual public scoping meeting was held on July 22, 2020, from 6:00 p.m. to 7:30 p.m. as a Zoom virtual meeting. The purpose of the meeting was to present preliminary information on the Project and receive early input on the proposed environmental studies and project alternatives. The PDT provided a video slide presentation on the SR 37 corridor and transportation planning, the existing traffic congestion on SR 37, the alternatives under consideration (to help the attendees understand the proposed project), the content and scope of the Environmental Document, and the environmental effects to be studied. Approximately 150 people attended.

As part of the scoping process, the public was invited to submit written comments on the scope and content of the Environmental Document over a 46-day period (July 9, 2020, to August 24, 2020). Forty-eight written comments were submitted during the public scoping period. Most written comments pertained to bicycle and pedestrian access, elements of the project design and operations, environmental issues to consider, agency coordination, and the Build Alternatives. Comments received during the scoping period and the virtual public scoping meeting were reviewed and summarized, and these materials have been made available on the Caltrans website (https://dot.ca.gov/caltrans-near-me/district-4/d4-projects/d4-37-corridor-projects/37-meetings-events).

Additional public outreach took place during the circulation period for the DEIR, as described further in Section "Draft Environmental Document Public Review," below.

Stakeholders

In addition to the public scoping meeting, periodic PDT meetings, which included representatives from Caltrans, MTC, SCTA, STA, NVTA and TAM, were held for the Project.

Meetings were also held with the various Bicycle and Pedestrian Advisory Committees (BPACs), which included the TAM BPAC, the Caltrans District 4 Bicycle Advisory Committee, the STA Bicycle Advisory Committee and SCTA BPAC, and the Napa County Bike Coalition.

A Technical Advisory Committee (TAC) consisting of these same agencies was established during the early phases of the Project as part of the SR 37 corridor planning. The TAC guided the development of the Project through early conception into the preliminary design and environmental review phase, referred to as the PA&ED phase. The SR 37 Policy Committee, a multi-county committee with policy makers participating from Marin, Napa, Sonoma, and Solano Counties, also provided guidance. The SR 37 Policy Committee was originally formed in 2015 as part of a Memorandum of Understanding to discuss joint county efforts to improve the SR 37 corridor. The SR 37 Policy Committee addressed issues such as

SLR, traffic congestion, transit options, and recreational activities and has continued to meet and provide input on project development.

During the development of the plan to evaluate near-term and long-term solutions to SR 37, a series of workshops and working group meetings was held with key environmental stakeholders in the development of alternatives. Workshop and meeting attendees included TAC members and representatives from San Francisco Bay Conservation and Development Commission (BCDC), the California Coastal Conservancy, the SR 37 Baylands Group, Ducks Unlimited, the Greenbelt Alliance, the Marin Audubon Society, Point-Blue Conservation Science, the San Francisco Bay Regional Water Quality Control Board (RWQCB), the San Francisco Bay Joint Venture, San Francisco Bay Trail, the San Francisco Estuary Institute, Sonoma-Marin Area Rail Transit, Sonoma Land Trust, the Nature Conservancy, the US Army Corps of Engineers (USACE), the US Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and the Vallejo Flood and Wastewater District.

As indicated in Section 1, Introduction, Caltrans is preparing the SR 37 Corridor Ultimate Project PEL Study. Caltrans and its partners at MTC and the four counties of Marin, Sonoma, Napa, and Solano have done extensive work and outreach on various aspects and areas along the SR 37 corridor. As part of the ongoing PEL study, Caltrans will review this information and work with stakeholders to develop an integrated plan to inform Caltrans' future Environmental Document efforts for the long-term SR 37 corridor project.

Caltrans will continue to communicate with project stakeholders throughout the Project.

Draft Environmental Document Public Review

The Draft Project Report (DPR) for the project was approved on December 31, 2021. The DEIR / Environmental Assessment (EA) was circulated to the public between January 13, 2022, and February 28, 2022. The public had more than 45 days to review and comment on the document.

The availability of the DEIR/EA for review and comment was advertised and noticed through a range of outreach methods. Each of the notices and mailers provided information on how to obtain and review the DEIR/EA; how to comment and the deadline for comments; how to participate in the public meeting; and who to contact at Caltrans for more information or assistance, including weblinks, Caltrans contacts and phone numbers/addresses, and an email box and a US Postal Service (USPS) mail address for submitting comments. The notices also included contact information in Spanish. A Notice of Completion (NOC) was posted with the California State Clearinghouse on January 13, 2022, identifying the start and end dates of the public review period (SCH #2020070226), and the NOC was distributed through the Clearinghouse to a wide range of State agencies and commissions. Letters to elected and non-elected officials were mailed. Postcards were distributed to local area mailing addresses through USPS Direct Mail service, and an information flyer was distributed through emails to the project and Caltrans distribution list. Newspaper advertisements were posted on January 13, 2022, in the *Vallejo Times Herald*, *Santa Rosa Press Democrat*, *Napa Valley Register*, and *Marin Independent Journal*.

In lieu of having one or more in-person meetings, a virtual open house was held for the protection of public health, in accordance with State of California Executive Order N-25-20 (March 12, 2020) and subsequent State and local orders limiting in-person gatherings due to the COVID-19 pandemic. The virtual public meeting took place on Wednesday, February 2, 2022, from 5:50 PM to 7 PM. The public meeting began with a presentation that provided an overview of the project and the environmental process, followed by a question-and-answer session. Attendees were invited to submit questions via an online chat function. Eighteen members of the public attended. A phone number was provided for technical help, translation, or assistive materials before, during, and after the meeting. No requests were received.

The purpose of the meeting was to encourage public involvement and comments and give the public an opportunity to view project information and ask questions of project team members. Attendees were encouraged to submit comments in writing via USPS or email to StateRoute37@dot.ca.gov. Comments were requested to be submitted by Tuesday, February 28, 2022.

Eight comment letters from agencies, 14 comment letters from organizations, 27 comments from individuals, and 48 comments from individuals regarding the PEL studies by Caltrans were submitted during the public review and comment period. Representative comment topics or concerns included opinions and input regarding the Preferred Alternative; sea level rise adaptation and flood inundation risk; preferences for incorporation of measures for climate adaptation; preferences for immediate congestion relief; recommendations for minimizing impacts to wetlands and habitat, and mitigation for unavoidable impacts; questions about installation of sheet piles and groundwater circulation; a request that the project address public shoreline access; support for maintaining bicycle access within the shoulders and bicycle safety; resource agency concerns regarding new lighting; comments on the median and outside shoulder barrier heights and design; and safety and access concerns regarding access to adjoining properties.

All formal comments are addressed and responses are included in the Final Environmental Impact Report (EIR). After the approval of this Final EIR/EA, a Notice of Determination and Notice of Availability will be filed and sent to affected units of federal, State, and local government, and to the State Clearinghouse, in compliance with Executive Order 12372.

Existing Facility and Route Description

State Route 37

SR 37 is a critical facility to regional and interregional traffic in the San Francisco Bay Area region that connects Marin, Sonoma, Napa, and Solano Counties. It is the northernmost non-mountainous east-west link between US 101 and Interstate 5 (via I-80 and Interstate 505). The highway is a parallel route north of the Richmond–San Rafael Bridge (Interstate 580 [I-580]) and is part of the Interregional Road System (IRRS) between US 101 and I-80. SR 37 connects job markets and housing within Marin, Sonoma, Napa, and Solano Counties and provides access to the popular wine-growing regions of Napa and Sonoma Counties, the San Pablo Bay National Wildlife Refuge, the Sonoma Raceway in Sonoma County, and the

Six Flags Discovery Kingdom and Mare Island in Solano County. Between US 101 and I-80, SR 37 connects with Lakeville Highway, SR 121, and SR 29. From US 101 to the signalized SR 121 intersection at Sears Point, SR 37 is a four-lane expressway. East of Sears Point, it becomes a two-lane conventional highway with a median barrier as it crosses the Napa-Sonoma marshlands. At Mare Island, SR 37 becomes a four-lane freeway. The route continues eastward, mostly on an elevated structure, to its termination at I-80. This segment crosses SR 29 in the City of Vallejo. There is no through public transit or rail service in the corridor. Although bicycling is permitted between US 101 and the Mare Island interchange, it has been observed that few cyclists use SR 37, possibly due to the two bridges (the Novato Creek and Petaluma River Bridges) with very narrow shoulders (less than 2 feet wide). The corridor has no pedestrian facilities, except for a section of the Bay Trail on the south side of the Napa River Bridge. In summary, SR 37 extends from US 101 in Novato, Marin County, to I-80 in Vallejo, Solano County.

The Project focuses on the portion of SR 37 that has a traffic capacity need where it transitions from four lanes to two lanes (between approximately SR 121 and the Mare Island interchange). The posted speed limit west of SR 121 is 50 miles per hour (mph). The posted speed limit on SR 37 between SR 121 and the Mare Island interchange is 55 mph. An advisory speed limit of 45 mph are posted at Sonoma Creek Bridge in both directions.

Between SR 121 and the Mare Island interchange, SR 37 is a two-lane conventional highway with a median barrier. This segment of the corridor is 9.3 miles long (2.3 miles in Sonoma County and 7.0 miles in Solano County). The Sonoma-Marin Area Rail Transit (SMART) rail line tracks cross SR 37 at grade about 550 feet east of SR 121. Within the project limits, SR 37 has three existing structures. Table 3-1 shows the structures within the project limits and the years of construction and improvements.

Table 3-1: Existing Structures within Project Limits

Bridge No.	Post Mile	Bridge Name	No. of Spans	Constructed	Widened
20-0090	Son PM 4.04	Tolay Creek Bridge	1	1931	1972
23-0063	Sol PM R0.01	Sonoma Creek Bridge	22	1969	2002
23-0109	Sol PM R7.21	Walnut Avenue Overcrossing	14	1967	N/A

Notes:
N/A = not applicable
No. = Number
PM = post mile(s)
Sol = Solano County
Son = Sonoma County

Between the western project limit and the SMART rail line at-grade crossing, the road elevation varies from 114.0 to 15.0 feet (North American Vertical Datum of 1988 [NAVD88]. Between the SMART at-grade crossing to the eastern project limit, the road elevation varies from 6.7 to 15.0 feet. The grades along the corridor are generally flat, ranging from 0.0% to 0.3%. At Sonoma Creek Bridge, the bridge elevation varies from 14.5 to 35.5 feet, and the grades vary from 0.08% to 4.0%. Between SR 121 and the Sonoma

Creek Bridge, SR 37 is protected by levees between Tolay Creek and Sonoma Creek. There is no bayfront levee protecting SR 37 from east of Sonoma Creek to Mare Island.

Within Sonoma County, the SR 37 right of way width is approximately 160 feet. Within Solano County, the right of way width typically varies from 140 to 160 feet; however, from Sol PM 3.44 to 3.48, the right of way width is between 95 and 101 feet, and from PM 5.60 to 6.70, the right of way width is approximately 125 feet. At these two locations, the distance from the centerline of roadway to the southern right of way line is approximately 25 feet.

Between SR 121 and the Sonoma Creek Bridge, the two-lane divided roadway has 12-foot lanes (one in each direction), an 8-foot outside shoulder in the westbound (WB) direction, an 8.75-foot outside shoulder in the EB direction, and a 10-foot wide median (4-foot inside shoulders) with a concrete barrier, for a total roadway width of 50.75 feet. Between Sonoma Creek Bridge and the Mare Island interchange, the two-lane divided roadway has 12-foot wide lanes (one in each direction), 8-foot outside shoulders, and a 10-foot wide median (4-foot inside shoulders) with a concrete barrier, for a total roadway width of 50 feet. The side slopes vary from 1.5:1 to 2:1 within the project limits.

SR 37 / SR 121 Intersection / Tolay Creek Road / Sears Point Road (Son PM 3.9)

The SR 37 / SR 121 intersection is signalized. The southern terminus of SR 121 is at this intersection. SR 121 has one northbound lane and one southbound (SB) lane within the project limits; however, the southbound lane splits into a dual left-turn lane into EB SR 37 and one lane to WB SR 37. The roadway is undivided with 9-foot wide to 11-foot wide outside shoulders.

The EB SR 37 approach to the intersection includes dual left-turn lanes and two through lanes. East of the intersection, EB SR 37 continues to two lanes and tapers to one lane just west of the railroad crossing. The WB SR 37 approach to the intersection has one left-turn lane into the Paradise Vineyards access driveway (Sears Point Road / Tolay Creek Road) along the south side and two through lanes.

The southern leg of the intersection consists of Sears Point Road / Tolay Creek Road, which accesses several parcels south of SR 37, including Paradise Vineyards and private property parcels adjacent to the SMART railroad tracks.

Between SR 121 and the Mare Island interchange, there are nine local access points, which are described below from west to east.

- Lower Tubbs Island Trailhead parking lot driveway (Sonoma County [Son] PM 4.6): This driveway is located along EB SR 37 and can only be accessed from the EB direction. The driveway provides access to the parking lot for the Lower Tubbs Island Trailhead, which runs along the San Pablo Bay National Wildlife Refuge. The parking lot driveway is stop-controlled at the intersection with EB SR 37.

- SR 121 / Noble Road intersection (Son PM 5.4): The intersection is an at-grade, four-legged intersection controlled by stop signs at Noble Road. There is a median turn lane for SR 37 traffic that allows left turns onto Noble Road. Noble Road traffic can

also use the median lane to access EB SR 37 from the northern leg of Noble Road or to access WB SR 37 from the southern leg of Noble Road. This intersection provides access to Wing and Barrel Ranch, a private hunting club on the north side and Vallejo Flood and Wastewater District (VFWD) property on the south side. VFWD uses the property to repurpose biosolids as soil amendment on Tubbs Island Farm.

- Sonoma Creek Bridge West Approach Vista Point driveway (Son PM R6.0): The driveway is just west of Sonoma Creek Bridge and can only be accessed from the EB direction. The intersection is stop-controlled at the driveway.

- Sonoma Creek Bridge East Approach Vista Point driveway (Sol PM R0.3): The driveway is located just east of Sonoma Creek Bridge and can only be accessed from the WB direction. The intersection is stop-controlled at the driveway.

- SR 37 / Skaggs Island Road intersection (Sol PM 1.7): This at-grade tee intersection is stop-controlled at Skaggs Island Road. EB SR 37 traffic can access the road, using an approximately 130-foot long left-turn pocket. Southbound traffic on Skaggs Island Road can access EB SR 37 by crossing one lane of WB SR 37 traffic and using an approximately 100-foot long acceleration lane. Westbound traffic on SR 37 can use an approximately 50-foot long right-turn deceleration lane to access the road.

- Cullinan Ranch Restoration Area driveway (Sol PM 3.9): This driveway is an at-grade tee intersection that can only be accessed from the WB direction using an exclusive, approximately 470-foot long right deceleration lane. Traffic from the driveway enters WB SR 37 traffic, using an approximately 400-foot-long acceleration lane. A 4-foot wide Class II bike lane is striped adjacent to the acceleration and deceleration lanes, resulting in an approximately 1,000-foot long Class II bike lane at this intersection.

- Private access roads: In addition to the access points mentioned above, there is one private driveway at Sol PM 2.70 and another private driveway at Sol PM 5.76.

- Mare Island interchange (Sol PM R7.21): The Mare Island interchange in Vallejo is a Type L-11 interchange with a trumpet design, where Walnut Avenue and Railroad Avenue terminate at the freeway along the south side. The Walnut Avenue overcrossing connects the WB on- and off-ramps on the north side to Walnut Avenue and Railroad Avenue on the south side of the interchange.

- SMART at-grade crossing (Son PM 4.00): The SMART rail corridor maintains a rail line that parallels SR 37 between US 101 and SR 121. There is an at-grade crossing immediately east of the SR 37 / SR 121 intersection, and the rail line continues northward.

Bicycle and Pedestrian Facilities

There are no pedestrian facilities on SR 37 within the project limits. Bicyclists are permitted on the outside shoulders of SR 37, which are the standard width of 8 feet. A striped Class II

bike lane exists in the EB direction at the Cullinan Ranch Restoration area driveway, and the bike lane runs the lengths of the acceleration and deceleration lanes (total length = 1,400 feet).

4. PURPOSE AND NEED

Purpose:

The purpose of the Project is to improve traffic flow and peak travel times and increase vehicle occupancy (number of people moved per vehicle) in the SR 37 corridor between SR 121 and the Mare Island interchange.

Need:

The Project is needed to address recurring congestion in the near term on SR 37, where the highway narrows to one lane in each direction between SR 121 and the Mare Island interchange. Capacity and merging constraints at present result in traffic queueing at the SR 37 / SR 121 intersection. Current demand and anticipated future transportation demand contribute to the need for this Project.

4A. Problem, Deficiencies, Justification

Existing Congestion and Transportation Demand

Based on traffic observations performed by AECOM in 2019, WB SR 37 traffic typically experiences congestion approaching the lane drop west of the Mare Island interchange for about 6 hours during the weekday a.m. peak period. Eastbound SR 37 congestion occurs approaching the lane drop east of the SR 121 intersection for about 6 hours during the weekday p.m. peak period. On typical weekdays, the maximum WB delay in the morning peak period is about 50 minutes, and the maximum EB delay in the afternoon peak period is about 68 minutes from US 101 to SR 29. The future traffic forecasted conditions indicate that traffic congestion will continue to worsen.

Existing roadway conditions on SR 37 affect the capacity of the highway. Constraints on traffic flow include merging conditions east of SR 121 and west of the Mare Island interchange where the lane drops from two lanes to one lane in each direction. Faster vehicles are unable to pass slower trucks and trailers. These capacity and merging constraints result in traffic queueing at the SR 37 / SR 121 intersection. In addition, roadway settlement causes traffic to slow near the railroad crossing near SR 121.

Existing Conditions

A.M. Peak Period

During the weekday a.m. peak period, a bottleneck occurs on WB SR 37 between the lane drop west of the Mare Island interchange and the SR 121 intersection; the bottleneck forms about 5 a.m. and dissipates about 11 a.m. Data and observations collected in 2019 indicated that the longest queue associated with this bottleneck extended approximately 1.2 miles east

to the Wilson Avenue interchange. The bottleneck section for WB SR 37 had a mainline throughput traffic volume of between 1,200 and 1,300 vehicles per hour (vph) per lane, which is below the expected one-way capacity (a vph of approximately 1,400 or more per lane) for a similar conventional highway. The maximum travel time between SR 29 and US 101 is approximately 50 minutes, as observed during the 6 to 7 a.m. hour, and the minimum travel time is approximately 25 minutes, as observed during the 10 to 11 a.m. hour. Thus, there is about a 25-minute difference between the maximum and minimum travel times.

In the a.m. peak period, vehicles with two or more passengers account for approximately 19% of the total vehicle composition in the EB direction, and 13% in the WB direction. In the a.m. peak period, truck volumes account for 10% in the EB direction and 6% in the WB direction.

P.M. Peak Period

During the weekday p.m. peak period, there is a substantial bottleneck on EB SR 37 beginning at the lane drop just east of the SR 121 intersection. The mainline queue approaching this bottleneck was observed to extend east of the Petaluma River Bridge, which is approximately 4 miles west of the SR 121 intersection; the bottleneck forms about 2 p.m. and dissipates at about 8 p.m. On a typical weekday, the mainline bottleneck throughput for the single EB lane peaks at Noble Road at approximately 1,300 vph at 2:00 p.m. and was observed to be as low as 1,100 vph, compared to a typical capacity of 1,400 vph for a similar conventional highway. The maximum travel time between U.S.101 and SR 29 is approximately 68 minutes, as observed during the 4 to 5 p.m. hour, and the minimum travel time is approximately 22 minutes, as observed during the 8 to 9 p.m. hour. Thus, there is a 46-minute difference between the maximum and minimum travel times.

During the p.m. peak period, vehicles with two or more occupants accounted for 17% of the total vehicle composition in the EB direction, and 14% in the WB direction. In general, HOV volumes were higher in the p.m. peak hour than in the a.m. peak hour. In the p.m. peak period, truck volumes account for 3% in the EB direction and 4% in the WB direction.

Forecasted Conditions

Forecasted volumes for the years 2025 and 2045 for the study area were developed using the most current Travel Model One (TM1) V6 model, which was developed and is maintained by MTC. The traffic demand inputs for the model were developed using traffic volume data from 2019 counts collected by AECOM. The year 2020 was approved for use as the base year (existing) model, which is the closest to the existing condition. The final future traffic forecasts were generated by applying the incremental method from the National Cooperative Highway Research Program Report 255, namely, adding the demand growth estimated by TM1 to the existing traffic data. From 2025 to 2045, the average annual growth rate in the study area is projected to be approximately 0.8% per year.

These forecast conditions are based on traffic counts and historic growth rates developed before the economic and travel conditions experienced beginning in spring 2020 and are

therefore representative of historical commuter demand. These traffic conditions represent economic recovery conditions in the future based on existing land uses that experience modest growth.

SR 37 Travel Time Calibration and Validation

The SR 37 Corridor Plan analyzed the traffic operations in the study corridor. The traffic demand inputs for the model were developed using the traffic volume data from 2019 counts collected by AECOM. A traffic model called VISSIM was developed for the study limits between US 101 and SR 29. It was calibrated to replicate the existing (2019) field conditions collected for the SR 37 Corridor Plan. Once calibrated, the VISSIM model was then applied to evaluate future conditions.

Peak direction travel times for 2019 are summarized in Table 4-1 (a.m. peak) and Table 4-2 (p.m. peak).

Table 4-1: SR 37 Peak Direction Travel Time Comparisons (between US 101 and SR 29): A.M. Peak Period

Time Interval	Eastbound Travel Times (in Minutes)	Westbound Travel Times (in Minutes)
5 a.m.	21.4	38.9
6 a.m.	21.7	49.5
7 a.m.	22.1	44.4
8 a.m.	21.9	41.6
9 a.m.	21.0	28.5
10 a.m.	21.7	25.0
Average	21.6	37.9

Source: AECOM 2019: Average of travel time runs collected on October 8, 2019, and October 16, 2019.

Table 4-2: SR 37 Peak Direction Travel Time Comparisons (between US 101 and SR 29: P.M. Peak Period

Time Interval	Eastbound Travel Times (in Minutes)	Westbound Travel Times (in Minutes)
2 p.m.	40.8	22.4
3 p.m.	56.9	22.7
4 p.m.	67.8	23.1
5 p.m.	62.6	22.0
6 p.m.	49.0	22.6
7 p.m.	34.4	21.7
8 p.m.	22.0	21.3
Average	47.6	22.3

Source: AECOM 2019: Average of travel time runs collected on October 8, 2019, and October 16, 2019.

4B. Regional and System Planning

The proposed modifications for the Project are consistent with regional and local planning, as discussed below.

Identify Systems

SR 37 is a critical facility to regional and interregional traffic in the San Francisco Bay Area region; the route connects Solano, Napa, Sonoma, and Marin Counties and provides access to the popular wine-growing regions of Napa and Sonoma Counties, the San Pablo Bay National Wildlife Refuge, the Sonoma Raceway in Sonoma County, Six Flags Discovery Kingdom, and Mare Island in Solano County. Within the project limits, SR 37 is primarily an interregional commute corridor through Sonoma, Napa, and Solano counties and is part of the IRRS between US 101 and I-80.

State Planning

The Highway 37 Stewardship Study (2012) led by the Road Ecology Center at UC Davis was completed in two phases. Phase I, which was funded by the Transportation Research Board, Strategic Highway Research Program 2, was completed in 2012. It identified five possible improvement scenarios for SR 37 between US 101 and the Mare Island interchange. The scenarios ranged from "no expansion" to "expanded footprint," "causeway," "strategic co-alignment," and "tunnel." Phase II was funded by a Caltrans State Planning and Research (SP&R) grant and was developed in 2015/16. Phase II included analysis of three improvement options: a roadway elevated on a levee, a roadway on a "monopod" concrete post causeway, and a roadway on a wood or concrete "trellis." Public multimodal access to the resources in the corridor and the potential for appropriate transit options were also identified for study in the following project phases. This study formed the basis for other subsequent corridor planning documents.

The State of California Sea-Level Rise Guidance Document (2013) recommends considering a range of SLR values and planning for the "worst-case scenario" for critical infrastructure with long life spans. Based on these recommendations, long-term alternatives will be required to plan for the 100-year storm plus a 66-inch SLR scenario. An update to the State of California Sea-Level Rise Document was released in 2018. The latest available SLR guidelines will be used to develop alternatives in the PA&ED phase.

The SR 37 TCR (2015) evaluated current and projected conditions along the route and presented a vision for the development of the route over a 25-year planning horizon. The 25-year concept for SR 37 is that it remains a four-lane expressway in Solano County. The TCR identifies future strategies for the route, including elevating the roadway to protect the facility from SLR and flooding, building the facility to maximize benefits to marshland restoration, providing continuous bicycle facilities and multimodal services, and adding marshland access points. The TCR was developed with the goals of increasing safety, improving mobility, providing excellent stewardship, and meeting community and environmental needs along the corridor through integrated management of the transportation network, including the highway, transit, pedestrian, bicycle, freight, operational

improvements, and travel demand management components of the corridor. The TCR also incorporated the goals of Plan Bay Area 2040, the regional transportation and land use plan created to address emissions and climate change. The concept identified in the TCR included the two-lane conventional segment between SR 121 (Sears Point) and Mare Island (Vallejo) as a candidate for widening from two to four lanes to close the gap between the two four-lane segments on either end. The TCR recognized the significance of the marshland environment and the presence of threatened and endangered species and habitats. Thus, the objective established for concept development and future roadway improvements would be to minimize impacts on these natural resources and to develop projects that would maximize both transportation and environmental objectives.

The 2016 *California Transportation Plan 2040* (CTP 2040) is a long-range policy framework and strategic approach to address California's future transportation trends and opportunities. It outlines goals and recommendations to achieve a vision for a safe, sustainable, universally accessible, and globally competitive transportation system that provides reliable and efficient mobility for people, goods and services, and information while meeting the State's greenhouse gas (GHG) emissions reduction goals and preserving the unique character of California's communities. The recommendations in CTP 2040 emphasize the importance of "partnership" to develop and implement future transportation policies, programs, and major statewide investments in transportation, the economy, and the environment that support a sustainable California.

Regional Planning

The MTC functions as both the State-designated Regional Transportation Planning Agency and federally designated Metropolitan Planning Organization. As such, it is responsible for the update of the Regional Transportation Plan (RTP), a long-range programming report for the region that incorporates known financial constraints.

Under SB 375, along with an updated RTP, each region in California must develop a Sustainable Communities Strategy (SCS) that promotes pedestrian- and bicycle-oriented, mixed-use commercial and residential development that is close to mass transit, jobs, schools, shopping, parks, recreation, and other amenities. MTC's Plan Bay Area (PBA), adopted in July 2013 and updated in July 2017, serves as the San Francisco Bay Area's RTP and SCS. MTC's PBA includes a multi-county project/program known as Highway 37 Improvements and Sea Level Rise Mitigation PSR with Regional Transportation Plan identification number (RTP ID) 17-10-0037.

The next RTP/SCS update for the PBA is Plan Bay Area 2050, which MTC recently adopted (October 21, 2021). SR 37 improvements are included in this plan under two separate line items. Table 4-3 provides information on the RTP ID, title, scope, open period, and funding related to the SR 37 Project in PBA 2050's Transportation Projects List.

Table 4-3: Plan Bay Area 2050 Transportation Project List (Includes SR 37)

RTP ID	Title	Scope	Open Period	Funding ($ millions)
21-T06-035	Corridor & Interchange Improvements | SR 37 | Multiple	This program includes funding to implement new HOV lanes between Mare Island and Sears Point and toll infrastructure to collect tolls charged to westbound vehicles and express bus service between Novato and Vallejo (30-minute peak headways) and other transportation demand management strategies, including Park and Ride facilities and bicycle and pedestrian enhancements.	2035	740
21-EN01-129	Sea Level Rise Adaptation Infrastructure | SR 37	This program includes funding to implement adaptation infrastructure along the SR 37 corridor from Novato to Vallejo. The program includes actions such as the elevation of critical infrastructure.	Various	5,120

Notes:
HOV = High Occupancy Vehicle
ID = identification number
RTP = Regional Transportation Plan
SR = State Route

This project is included in the regional Transportation Improvement Program (TIP ID VAR 21004). Currently, $415 million is included in the latest approved TIP as of December 16, 2022. A request for a TIP amendment has been submitted for approval, which reflects increased project cost to $430 million, approval for the TIP amendment is anticipated in January of 2023.

The Project is part of the near-term improvements under RTP ID 21-T06-035, along with other corridor projects anticipated to be completed before 2035. The Resilient 37 Project is part of the long-term improvements under RTP ID 21-EN01-129, which includes funding to implement adaptation infrastructure along the SR 37 corridor from Novato to Vallejo.

The District 4 Bike Plan, completed in 2018, studied existing conditions for biking along and across the State Transportation Network in the nine-county Bay Area and developed a list of priority projects to address existing bicycle needs and future bicycle demand. The District 4 Bike Plan identified the following needs within the project limits: a Class I facility on SR 37 over the entirety of the project limits (from Novato to Vallejo) and a Class II bike lane on SR 121 from the SR 37 / SR 121 interchange to Redwood Highway.

The District 4 Pedestrian Plan, completed in 2021, studied existing conditions for walking along and across the State Transportation Network in the nine-county Bay Area and developed a list of location-based needs and prioritized needs. The District 4 Pedestrian Plan identified several crossing needs and a corridor improvement need within the project limits: a crossing need at SR 121 and De Mattos Road, a crossing need at SR 37 and Noble Road, and a corridor need at Guadalcanal Village.

Local Planning

The Congestion Management Agency for Sonoma County is SCTA. SCTA is responsible for countywide transportation planning, programming transportation funds, managing and providing transportation programs and services, delivering transportation projects, and setting transportation priorities.

SCTA's *Draft Comprehensive Transportation Plan (CTP) Moving Forward 2050* examines the current state of transportation in the county, looks at future needs and goals, and provides information on how these needs and goals can be met. The SR 37 Corridor Protection and Enhancement Capital Project is listed under the CTP project list.

The Congestion Management Agency for Solano County is STA. Similar to SCTA, STA is responsible for countywide transportation planning and programming for transportation-related issues. It plays a lead role in securing funds, providing project oversight, and initiating long-term planning,

STA's Comprehensive Transportation Plan for Solano County envisions, directs, and prioritizes the transportation needs of Solano County. The CTP incorporates various STA studies and plans into a 25-year planning document. Solano County CTP 2040 was completed in June 2020. SR 37 corridor improvements are listed under Tier 1 Arterials, Highways and Freeways Projects and Programs in the CTP. Tier 1 projects in the CTP are projects and programs that are already in place or ready for near-term implementation that offer the greatest opportunity for STA to provide financial support.

The State Highway Operation and Protection Program (SHOPP) is the State's "fix-it-first" program. It funds repair and preservation of the State Highway System, safety improvements, and highway operational improvements. The projects listed in Table 4-4 are the current and planned SHOPP projects on SR 37 in the vicinity of the Project limits.

Two of these highway safety and operation projects, the SR 37/SR 121 intersection improvement (EA 1Q480) and SR 37 eastbound lane extension and railroad crossing at Tolay Creek (EA 2Q200), were proposed to reduce vehicle hours of delay at the SR 37/SR 121 intersection. These improvements fall within the footprint of the Sears Point to Mare Island project and they have been combined into one single project, EA 04-2Q20U, SR 37/ SR 121 Intersection Improvement.. The Project's environmental document addresses the potential environmental impacts of these projects, which may be constructed either as independent operational improvements, or incorporated into the Sears Point to Mare Island project. If these projects were to proceed to construction independent of the Sears Point to Mare Island project, the Project's environmental document addresses their potential environmental impacts. This consideration has been noted in the SR 37 Sears Point to Mare Island Final EIR/EA.

Table 4-4: Current and Planned SHOPP Projects in Vicinity of the Project Limits

County	Target Program	EA	Description	Approximate Construction Cost*	Construction Date*
Mrn	2020 SHOPP	2Q500	Near Novato, at Petaluma River Bridge No. 27-0013, rehabilitate bridge deck, upgrade railings, replace fender system, and mitigate bridge scour.	$32.0M	2025
Mrn	2020 SHOPP	2K740	In and near Novato, from US 101 to Sonoma County line, rehabilitate pavement, upgrade guardrail, and upgrade facilities to Americans with Disabilities Act standards.	$18.9M	2025
Son	2020 SHOPP	1Q480	Near Novato, at the intersection with SR 121, improve traffic operations by modifying the intersection.	$6.0M	2024
Son	2020 SHOPP	2Q200	Near Novato, from SR 121 to 0.2 mile east of SR 121, improve traffic operations by extending the lane merge in the EB direction.	$11.7M	2024
Sol	2020 SHOPP	0P760	In Solano County, on State Routes 12, 29, 37, 80, and 780 at various locations, enhance pedestrian safety by installing Accessible Pedestrian Signal systems and countdown timers and by upgrading crosswalk markings.	$6.0M	2024
Son	2020 SHOPP Long Lead	4Q320	In Marin County on State Route 37, in and near Novato, from US 101 to Atherton Avenue. Reconstruct the roadway to address sea level rise and recurrent flooding.	$150M	2027

* Costs and proposed construction dates are subject to change.

Notes:
EA = Expenditure Authorization
EB = eastbound
Mrn = Marin County
SHOPP = State Highway Operation and Protection Program
Sol = Solano County
Son = Sonoma County
SR = State Route
US 101 = United States Highway 101

4C. Traffic

Current and Forecasted Traffic

AECOM conducted the traffic studies for the project. The traffic studies were detailed in the Traffic Operations Analysis Report (TOAR) prepared in December 2021.

The operational analysis evaluated existing and future conditions. Existing conditions represent the year 2019. Future conditions are projected for the years 2025 (opening year) and 2045 (design year).

Freeway operations were analyzed using VISSIM microsimulation analysis software, and the analysis was based on the procedures and methodologies outlined in the 2010 Highway Capacity Manual (Transportation Research Board 2011). The a.m. and p.m. peak operational models were calibrated and validated to observed traffic counts, travel times, bottleneck locations, and queues.

The TOAR also analyzed system wide performance measures, called Measures of Effectiveness (MOEs), to provide an understanding of overall traffic operations.

The majority of SR 37 is a four-lane facility with two lanes in both the EB and the WB directions. The segment of SR 37 that makes up the project limits (between SR 121 and the Mare Island interchange) narrows to a two-lane facility with one lane in each direction.

Currently, commuters experience significant recurring traffic congestion/delays at the bottlenecks within the traffic study limits during the peak hours because traffic demands exceed capacity in the segments between SR 121 and Mare Island, where the existing two lanes merge into one lane in both the EB and the WB directions. Traffic conditions are expected to worsen as development in the region and within and adjacent to the SR 37 corridor continues. Growth in travel demand on SR 37 is expected to result in longer travel times during the morning and evening peak periods.

The traffic study area includes the segment of SR 37 between SR 121 and Mare Island and several mainline segments and intersections extending from the SR 29 interchange in the city of Vallejo to the US 101 interchange in the city of Novato. The study area was extended farther than the physical project limits to allow full analysis of traffic conditions. The study mainline segments and intersections include the following:

- Mainline segments:
    - SR 37 between US 101 interchange and SR 121 intersection
    - SR 37 between SR 121 intersection and Mare Island interchange
    - SR 37 between Mare Island interchange and SR 29 interchange
- Intersections:
    - SR 37 and Lakeville Highway (signal)
    - SR 37 and SR 121 (signal)
    - SR 37 and Noble Road (two-way stop control)
    - SR 37 and Skaggs Island Road (two-way stop control)
    - SR 37 WB ramps and Walnut Avenue / Main Gate (two-way stop control)
    - SR 37 EB ramps and Walnut Avenue / Main Gate (two-way stop control)

The TOAR (AECOM 2021) describes and compares overall performance of the No-Build and Build future conditions by factors such as delay, total travel time, and speed. The traffic study analyzed peak period conditions, defined as 5 a.m. to 11 a.m. (a.m. peak) and 2 p.m. to 9 p.m. (p.m. peak). These conditions represent the most congested periods of the day and are used to define the peak hour for purposes of the impact analysis.

The traffic volumes dataset for the SR 37 corridor was derived from the project-specific data collections, including the following:

- 2019 SR 37 highway vehicle classification counts
- 2019 SR 37 highway HOV occupancy survey
- 2019 SR 37 highway and ramp segment counts
- 2019 study intersection turning movement counts

Level of Service (LOS) is normally used to describe the ability of a roadway to accommodate prevailing traffic volumes at the critical intersections based on the physical characteristics of the roadway. LOS ranges from "A" (which represents uncongested, free-flowing conditions) to "F" (representing total breakdown with stop-and-go operation). Table 4-5 shows the LOS designation and corresponding delay thresholds for both signalized and unsignalized intersections.

Table 4-5: Intersection LOS Thresholds

LOS	Signalized Intersection Delay Thresholds (seconds/vehicle)	Unsignalized Intersections Delay Thresholds (seconds/vehicle)	Description
A	delay ≤ 10.0	delay ≤ 10.0	Little or no traffic delay
B	10.0 < delay ≤ 20.0	10.0 < delay ≤ 15.0	Minimal traffic delay
C	20.0 < delay ≤ 35.0	15.0 < delay ≤ 25.0	Average traffic delay
D	35.0 < delay ≤ 55.0	25.0 < delay ≤ 35.0	Long traffic delay
E	55.0 < delay ≤ 80.0	35.0 < delay ≤ 50.0	Very long traffic delay
F	delay > 80.0	delay > 50.0	Extreme traffic delay

Notes:
LOS = Level of Service

Existing Traffic Conditions

Based on field observations, westbound is the peak direction during the a.m. peak period. The westbound SR 37 bottleneck starts at the Mare Island lane drop, and the queue extends to the Wilson Avenue interchange during the a.m. peak hours. The maximum flow from this bottleneck is approximately 1,250 vph. The maximum travel time between SR 29 and southbound U.S. 101 is 50 minutes, as observed from 6 a.m. to 7 a.m., and the minimum travel time is 25 minutes, as observed from 10 a.m. to 11 a.m.

During the a.m. peak period, the intersection of the SR 37 westbound ramps / Walnut Avenue intersection operates at LOS E/F during the 5 a.m. to 8 a.m. hours. The intersection of the SR 37 EB ramps / Walnut Avenue intersection operates at LOS E/F between 6 a.m. and 8 a.m. The congestion forms at these intersections because demand exceeds capacity for SR 37.

During the p.m. peak period, EB is the peak direction. The EB bottleneck starts at the lane drop east of the SR 121 intersection, and the queue extends to Railroad Avenue. The maximum flow from this bottleneck is approximately 1,250 vph. The maximum travel time between northbound U.S. 101 and SR 29 is 68 minutes, as observed from 4 p.m. to 5 p.m.; and the minimum travel time is 22 minutes, as observed from 8 p.m. to 9 p.m.

In the p.m. peak period, the intersection of SR 37 / SR 121 operates at LOS F from 2 p.m. to 8 p.m., and the intersection of SR 37 / Lakeville Highway operates at LOS E/F from 3 p.m. to 7 p.m. (evening commute). Eastbound traffic typically becomes congested from the bottleneck east of the SR 121 intersection to the Lakeville Highway intersection during evening commute hours.

The lane drops and merges on SR 37 affect the operations of the highway where it narrows from two lanes to one lane in each direction (just east of SR 121, and at Mare Island just west of the Napa River Bridge). Lane merges on SR 37 are the major causes of congestion along this segment of the corridor. Within the project limits, faster vehicles cannot pass slower vehicles because there is only one lane in each direction, and no passing is allowed.

There are several study intersections currently operating at unacceptable LOS E/F conditions in one or more hours during the a.m. and p.m. peak periods. Unsignalized intersections at Noble Road and Skaggs Island Road experience delays in general because drivers exiting from these side streets have difficulty finding gaps to enter SR 37.

HOV Volumes

HOV volumes with 2+ occupancy were extracted from the 2019 Vehicle Occupancy Data collected manually at Noble Road for both EB and WB vehicles in Segment B. The HOV percentage represents the proportion of HOV vehicles to the total vehicles traveling in the lanes. Table 4-6 and Table 4-7 summarize the HOV volumes and percentages for the a.m. and p.m. peak periods respectively.

Table 4-6: Existing HOV Volumes and Percentages: A.M. Peak

Location	Date	A.M. Peak Period [1]			A.M. Peak Hour [2]		
		Total Volume	HOV Volume	HOV %	Total Volume	HOV Volume	HOV %
Segment B – at Noble Road							
Eastbound	10/08/2019	5,250	1,002	19%	1,118	220	20%
Westbound	10/08/2019	7,362	9,42	13%	1,264	287	23%

Source: AECOM 2019
1. A.m. peak period defined as 5:00 to 11:00 a.m.

2. EB and WB peak hour varies by direction; hour with the highest HOV 2+ % is shown.

Notes:
HOV = High Occupancy Vehicle

Table 4-7: Existing HOV Volumes and Percentages: P.M. Peak

Location	Date	P.M. Peak Period [1]			PM Peak Hour [2]		
		Total Volume	HOV Volume	HOV %	Total Volume	HOV Volume	HOV %
Segment B – at Noble Road							
Eastbound	10/08/2019	8,090	1,376	17%	1,245	292	23%
Westbound	10/08/2019	5,608	774	14%	1,045	185	18%

Source: AECOM 2019
1. P.m. peak period defined as 2:00 p.m. to 9:00 p.m.
2. EB and WB peak hour varies by direction; hour with the highest HOV 2+ % is shown.

Notes:
HOV = High Occupancy Vehicle

Truck Volumes

Truck percentage data for SR 37 within the study area were extracted from the 2019 Vehicle Classification Counts. The data represent the number of trucks as a percentage of the vehicle composition for certain locations. Table 4-8 and Table 4-9 summarize the truck volumes and percentages for the a.m. and p.m. peak periods respectively.

Table 4-8: Existing Truck Volumes and Percentages: A.M. Peak

Location	Date	A.M. Peak Period [1]			A.M. Peak Hour[2]		
		Total Volume	Truck Volume	Truck %	Total Volume	Truck Volume	Truck %
Segment A – East of Atherton Avenue							
Eastbound	10/08/2019	3,906	157	4%	828	46	6%
Westbound	10/08/2019	9,454	196	2%	1,412	42	3%
Segment B – East of Skaggs Island Road							
Eastbound	10/08/2019	5,205	507	10%	948	118	12%
Westbound	10/08/2019	7,376	478	6%	1,164	105	9%

Source: AECOM 2019
General note: Volume shown for trucks is for three axles or more.
1. A.m. peak period is defined as 5:00 a.m. to 11:00 a.m.
2. EB and WB peak hour varies by direction; hour with the highest Truck % is shown.

Table 4-9: Existing Truck Volumes and Percentages: P.M. Peak

Location	Date	P.M. Peak Period [1]			P.M. Peak Hour [2]		
		Total Volume	Truck Volume	Truck %	Total Volume	Truck Volume	Truck %
Segment A – East of Atherton Avenue							
Eastbound	10/08/2019	9,046	141	2%	1,643	52	3%
Westbound	10/08/2019	5,201	90	2%	883	20	2%
Segment B – East of Skaggs Island Road							
Eastbound	10/08/2019	8,095	221	3%	1,204	62	5%
Westbound	10/08/2019	5,620	228	4%	1,016	46	5%

Source: AECOM 2019
General note: Volume shown for trucks is for three axles or more.
1. P.m. peak period is defined as 2:00 p.m. to 9:00 p.m.
2. Eastbound and westbound peak hours vary by direction; hour with the highest Truck % is shown.

Forecasted Traffic Conditions

This section summarizes the traffic conditions for the opening year 2025 and design year 2045 for the No-Build Alternative and the Preferred Alternative, as reported in the December 2021 TOAR. Travel times (the modeled average time to travel a segment of the corridor) were predicted and are discussed in the following sections. The SR 37 / Noble Road intersection was evaluated and reported in the TOAR without a signal, but a project decision was made to include a signal at this intersection. With the signal, operations at SR 37 / Noble Road is expected to function at or better than what is described in this section and the TOAR for all alternatives. Overall, the Project would provide for additional traffic capacity during the peak periods and, in many cases, improve travel time. The Project is studying three eastbound HOV lane commencement scenarios. Each of the eastbound lane scenarios identified in the following tables is further described in Section 5, Alternatives. Scenario 1 introduces the HOV lane on the right side approximately 0.6 mile west of SR 121. Scenario 2 introduces the HOV lane on the left side east of SR 121, in the vicinity of the Tolay Creek Bridge. Scenario 3 (included with the Preferred Alternative) introduces the EB HOV lane on the left side about 0.6 mile west of SR 121 and extends the EB left-turn lanes to northbound SR 121 by approximately 0.5 mile to the west.

Intersection LOS 2025

Intersection LOS results were obtained from the VISSIM operational analysis and are summarized in Table 4-10 and Table 4-11 for the a.m. and p.m. peak periods respectively.

Similar to the existing conditions, under 2025 No-Build conditions, it is observed from the results that of the six study intersections, three in the a.m. and four in the p.m. would continue to operate at LOS E or F in one or more hours during the peak periods.

Table 4-10: 2025 Intersection Level of Service Condition Summary: A.M. Peak Period

No.	Intersection	Control	Hour (Starting)	No-Build		Build					
						Alt-3B HOV Scenario 1		Alt-3B HOV Scenario 2		Alt-3B HOV Scenario 3*	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	SR 37 and Lakeville Highway	Signal	5:00	9.2	A	9.2	A	9.5	A	9.5	A
			6:00	15.5	B	18.4	B	18.7	B	18.7	B
			7:00	17.7	B	20.7	C	20.3	C	20.3	C
			8:00	18.4	B	20.1	C	18.7	B	18.7	B
			9:00	16.9	B	17.9	B	17.2	B	17.2	B
			10:00	15.8	B	13.5	B	13.5	B	13.5	B
2	SR 37 and SR 121	Signal	5:00	6.9	A	8.5	A	8.6	A	8.6	A
			6:00	10.7	B	12.1	B	11.8	B	11.8	B
			7:00	14.8	B	16.3	B	16.3	B	16.3	B
			8:00	14.4	B	15.3	B	17.0	B	17.0	B
			9:00	11.5	B	11.4	B	12.3	B	12.3	B
			10:00	13.3	B	12.4	B	13.0	B	13.0	B
3	SR 37 and Noble Road	TWSC	5:00	1.4	A	0.1	A	2.9	A	2.9	A
			6:00	2.0	A	0.4	A	0.7	A	0.7	A
			7:00	31.3	D	1.7	A	5.1	A	5.1	A
			8:00	**43.0**	**E**	**57.3**	**F**	26.3	D	26.3	D
			9:00	18.0	C	4.1	A	8.0	A	8.0	A
			10:00	18.6	C	2.1	A	0.6	A	0.6	A
4	SR 37 and Skaggs Island Road	TWSC	5:00	1.2	A	2.7	A	6.2	A	6.2	A
			6:00	14.3	B	3.1	A	0.9	A	0.9	A
			7:00	1.5	A	8.3	A	10.4	B	10.4	B
			8:00	11.8	B	12.2	B	11.4	B	11.4	B
			9:00	11.9	B	11.5	B	11.4	B	11.4	B
			10:00	1.3	A	0.2	A	0.3	A	0.3	A
5	SR 37 WB Ramps and Walnut Avenue/ Main Gate	TWSC	5:00	**57.3**	**F**	10.9	B	10.9	B	10.9	B
			6:00	**89.1**	**F**	11.7	B	11.8	B	11.8	B
			7:00	**91.6**	**F**	10.9	B	10.9	B	10.9	B
			8:00	**37.6**	**E**	11.0	B	11.0	B	11.0	B
			9:00	11.0	B	11.0	B	12.0	B	12.0	B
			10:00	11.0	B	11.0	B	11.0	B	11.0	B
6	SR 37 EB Ramps and Walnut Avenue/ Main Gate	TWSC	5:00	23.4	C	7.1	A	7.1	A	7.1	A
			6:00	**116.0**	**F**	14.4	B	14.0	B	14.0	B
			7:00	**131.6**	**F**	15.6	C	15.6	C	15.6	C
			8:00	19.0	C	13.0	B	13.0	B	13.0	B
			9:00	2.1	A	13.2	B	13.2	B	13.2	B
			10:00	11.5	B	11.0	B	11.0	B	11.0	B

Notes:
Alt = Alternative; EB = eastbound; LOS = Level of Service; SR = State Route; TWSC = two-way stop controlled; WB = westbound

Results are based on the VISSIM simulation average of multiple runs.
1. Average intersection delay expressed in seconds per vehicle.
*Build Alt HOV Scenario 3 was not analyzed separately for the a.m. peak period, as it has the same lane configuration as Build Alt Scenario 2 in the WB direction. Build Alt Scenario 3 is expected to operate like the Build Alt Scenario 2. Build Alt Scenario 2 results are used for Build Alt Scenario 3 for comparison purposes.
Eastbound HOV Commencement Scenarios (HOV Scenarios) are described in Section 5, Alternatives.
TWSC intersection analyzed for worst movement.
Bold indicates intersections that are operating at LOS E or F.

Table 4-11: 2025 Intersection Level of Service Condition Summary: P.M. Peak Period

No.	Intersection	Control	Hour (Starting)	No-Build		Build					
						Alt- 3B HOV Scenario 1		Alt-3B HOV Scenario 2		Alt-3B HOV Scenario 3	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	SR 37 and Lakeville Highway	Signal	2:00	**85.4**	**F**	31.6	C	30.6	C	32.0	C
			3:00	**178.4**	**F**	36.1	D	35.0	C	35.1	D
			4:00	**196.4**	**F**	26.7	C	26.5	C	25.8	C
			5:00	**202.5**	**F**	20.7	C	20.5	C	19.9	B
			6:00	**172.1**	**F**	15.3	B	16.2	B	16.2	B
			7:00	**199.2**	**F**	12.2	B	12.4	B	12.3	B
			8:00	**53.1**	**E**	10.4	B	10.3	B	10.5	B
2	SR 37 and SR 121	Signal	2:00	**196.3**	**F**	20.7	C	23.6	C	19.6	B
			3:00	**221.2**	**F**	31.5	C	50.8	D	33.0	C
			4:00	**240.4**	**F**	31.4	C	**75.4**	**E**	53.0	D
			5:00	**241.2**	**F**	19.8	B	29.2	C	24.0	C
			6:00	**242.4**	**F**	14.1	B	13.6	B	13.1	B
			7:00	**256.0**	**F**	11.7	B	11.4	B	11.0	B
			8:00	**203.3**	**F**	8.2	A	7.9	A	8.3	A
3	SR 37 and Noble Road	TWSC	2:00	**384.2**	**F**	**72.0**	**F**	**102.0**	**F**	**74.2**	**F**
			3:00	**150.4**	**F**	12.5	B	**42.7**	**E**	**81.7**	**F**
			4:00	**173.5**	**F**	**72.9**	**F**	**127.8**	**F**	**143.7**	**F**
			5:00	**255.2**	**F**	32.5	D	**277.4**	**F**	**80.4**	**F**
			6:00	**56.1**	**F**	5.5	A	4.9	A	5.3	A
			7:00	19.3	C	5.0	A	4.2	A	4.2	A
			8:00	9.0	A	1.1	A	0.5	A	1.9	A
4	SR 37 and Skaggs Island Road	TWSC	2:00	**75.1**	**F**	14.6	B	13.7	B	13.0	B
			3:00	**66.9**	**F**	8.8	A	6.0	A	10.5	B
			4:00	**114.3**	**F**	13.7	B	12.4	B	12.6	B
			5:00	**56.7**	**F**	7.3	A	7.3	A	7.9	A
			6:00	23.4	C	6.7	A	6.2	A	7.1	A
			7:00	9.1	A	3.7	A	2.2	A	5.1	A
			8:00	12.7	B	11.6	B	12.5	B	11.8	B
5	SR 37 WB ramps and Walnut Avenue/ Main Gate	TWSC	2:00	10.9	B	11.0	B	11.0	B	11.0	B
			3:00	10.9	B	11.0	B	11.0	B	11.0	B
			4:00	11.0	B	11.0	B	11.0	B	11.0	B
			5:00	11.1	B	11.1	B	11.1	B	11.1	B
			6:00	11.1	B	11.1	B	11.1	B	11.1	B
			7:00	10.9	B	10.9	B	10.9	B	10.9	B
			8:00	11.0	B	11.0	B	11.0	B	11.0	B
6	SR 37 EB ramps and Walnut Avenue/ Main Gate	TWSC	2:00	11.5	B	2.3	A	2.3	A	2.3	A
			3:00	11.4	B	12.6	B	12.6	B	12.6	B
			4:00	14.2	B	11.6	B	11.6	B	11.6	B
			5:00	12.7	B	12.9	B	12.8	B	12.8	B
			6:00	12.1	B	12.4	B	12.4	B	12.4	B
			7:00	13.2	B	11.2	B	11.2	B	11.2	B
			8:00	11.3	B	1.6	A	1.6	A	1.6	A

Notes:
Alt = Alternative; EB = eastbound; HOV = High Occupancy Vehicle; LOS = Level of Service; SR = State Route; TWSC = two-way stop controlled; WB = westbound

Results are based on the VISSIM simulation average of multiple runs.
1. Average intersection delay expressed in seconds per vehicle.

TWSC intersection analyzed for worst movement.
Bold indicates intersections that are operating at LOS E or F.
Eastbound HOV Commencement Scenarios (HOV scenarios) are described in Section 5, Alternatives.

Intersection LOS 2045

Under 2045 No-Build conditions, of the six study intersections, three operate at LOS E or F conditions in the a.m. peak period and five operate at LOS E or F conditions in the p.m. peak period. In the 2045 p.m. peak period, the intersection of SR 37 WB ramps / Walnut Avenue also becomes worse because of an increase in demand volumes.

During the a.m. peak period, all three intersections that operate at LOS E or F under 2045 No-Build conditions continue to operate the same under the Build Alternative, except for SR 37 / Noble Road, which operates at a better LOS in the Build Alternative Scenario 2 and the Preferred Alternative Scenario 3 conditions.

During the p.m. peak period, Build Alternative 1/2 conditions remain similar to the No-Build. Under Build Alternative conditions, the SR 37 / Skaggs Island intersection LOS improves, and the SR 37 / Lakeville Highway, SR 37 / SR 121, SR 37 / Noble Road, and SR 37 WB ramps / Walnut Avenue intersections continue to operate at LOS F in one or more hours as under the No-Build conditions. Table 4-12 and Table 4-13 show the 2045 LOS conditions for the studied intersections for the a.m. and p.m. peak periods respectively.

Table 4-12: 2045 Intersection Level of Service Condition Summary: A.M. Peak Period

No.	Intersection	Control	Hour (Starting)	No-Build		Build					
						Alt-3B HOV Scenario 1		Alt-3B HOV Scenario 2		Alt-3B HOV Scenario 3*	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	SR 37 and Lakeville Highway	Signal	5:00	9.8	A	10.9	B	10.6	B	10.6	B
			6:00	19.5	B	24.2	C	23.8	C	23.8	C
			7:00	21.4	C	27.3	C	26.6	C	26.6	C
			8:00	20.9	C	24.0	C	23.2	C	23.2	C
			9:00	19.7	B	21.6	C	21.2	C	21.2	C
			10:00	17.8	B	19.4	B	19.7	B	19.7	B
2	SR 37 and SR 121	Signal	5:00	7.8	A	9.6	A	10.0	A	10.0	A
			6:00	11.7	B	13.2	B	14.1	B	14.1	B
			7:00	15.7	B	16.7	B	18.2	B	18.2	B
			8:00	15.9	B	18.1	B	19.3	B	19.3	B
			9:00	13.2	B	14.1	B	14.4	B	14.4	B
			10:00	13.5	B	18.2	B	18.3	B	18.3	B
3	SR 37 and Noble Road	TWSC	5:00	1.4	A	0.2	A	0.2	A	0.2	A
			6:00	2.1	A	0.3	A	0.3	A	0.3	A
			7:00	20.9	C	3.1	A	7.2	A	7.2	A
			8:00	**97.2**	**F**	**43.9**	**E**	16.8	C	16.8	C
			9:00	31.1	D	11.7	B	15.6	C	15.6	C
			10:00	28.8	D	5.0	A	4.9	A	4.9	A
4	SR 37 and Skaggs Island Road	TWSC	5:00	7.8	A	13.3	B	2.4	A	2.4	A
			6:00	1.3	A	12.7	B	18.9	C	18.9	C
			7:00	13.3	B	9.6	A	4.1	A	4.1	A

No.	Intersection	Control	Hour (Starting)	No-Build		Build					
						Alt-3B HOV Scenario 1		Alt-3B HOV Scenario 2		Alt-3B HOV Scenario 3*	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
			8:00	12.1	B	12.0	B	11.6	B	11.6	B
			9:00	11.9	B	12.2	B	12.0	B	12.0	B
			10:00	1.3	A	0.3	A	0.5	A	0.5	A
5	SR 37 WB ramps and Walnut Avenue / Main Gate	TWSC	5:00	**66.6**	**F**	10.9	B	10.9	B	10.9	B
			6:00	**88.2**	**F**	**42.6**	**E**	**38.3**	**E**	**38.3**	**E**
			7:00	**90.6**	**F**	**55.4**	**F**	**67.7**	**F**	**67.7**	**F**
			8:00	**35.3**	**E**	11.0	B	23.1	C	23.1	C
			9:00	11.0	B	11.9	B	11.0	B	11.0	B
			10:00	11.0	B	11.0	B	12.0	B	12.0	B
6	SR 37 EB ramps and Walnut Avenue / Main Gate	TWSC	5:00	**36.3**	**E**	16.5	C	16.5	C	16.5	C
			6:00	**125.5**	**F**	**63.8**	**F**	**58.9**	**F**	**58.9**	**F**
			7:00	**132.5**	**F**	**100.7**	**F**	**103.6**	**F**	**103.6**	**F**
			8:00	25.4	D	11.3	B	11.3	B	11.3	B
			9:00	11.9	B	13.2	B	13.2	B	13.2	B
			10:00	11.3	B	12.8	B	12.8	B	12.8	B

Notes:
Alt = Alternative; EB = eastbound; HOV = High Occupancy Vehicle; LOS = Level of Service; SR = State Route; TWSC = two-way stop controlled; WB = westbound

Results are based on VISSIM simulation average of multiple runs.
1. Average intersection delay expressed in seconds per vehicle.
* Build Alt Scenario 3 was not analyzed separately for the a.m. peak period, as it has the same lane configuration as Build Alt Scenario 3 in the EB direction. Build Alt Scenario 3 is expected to operate similar to Build Alt Scenario 2. Build Alt Scenario 2 results are used for Alt-3A/3B Scenario 3 for comparison purposes.
TWSC intersections analyzed for worst movement.
Bold indicates intersections that are operating at LOS E or F.
Eastbound HOV Commencement Scenarios (HOV scenarios) are described in Section 5, Alternatives.

Table 4-13: 2045 Intersection Level of Service Condition Summary: P.M. Peak Period

No.	Intersection	Control	Hour (Starting)	No-Build		Build					
						Alt- 3B HOV Scenario 1		Alt- 3B HOV Scenario 2		Alt- 3B HOV Scenario 3	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	SR 37 and Lakeville Highway	Signal	2:00	**256.4**	**F**	**79.1**	**E**	**71.7**	**E**	**78.8**	**E**
			3:00	**285.2**	**F**	**84.9**	**F**	**89.6**	**F**	**87.3**	**F**
			4:00	**230.5**	**F**	**86.7**	**F**	**130.6**	**F**	**114.5**	**F**
			5:00	**197.6**	**F**	**119.4**	**F**	**138.0**	**F**	**138.0**	**F**
			6:00	**167.2**	**F**	**100.5**	**F**	**135.8**	**F**	**123.4**	**F**
			7:00	**187.2**	**F**	16.6	B	**68.7**	**E**	26.2	C
			8:00	**189.5**	**F**	11.3	B	11.3	B	11.3	B
2	SR 37 and SR 121	Signal	2:00	**190.6**	**F**	29.0	C	32.9	C	24.1	C
			3:00	**213.1**	**F**	**145.2**	**F**	**136.1**	**F**	**130.7**	**F**
			4:00	**236.7**	**F**	**182.2**	**F**	**155.4**	**F**	**178.6**	**F**
			5:00	**238.7**	**F**	**193.0**	**F**	**165.2**	**F**	**186.9**	**F**
			6:00	**213.6**	**F**	**188.4**	**F**	**162.1**	**F**	**183.8**	**F**
			7:00	**239.3**	**F**	**108.5**	**F**	**100.9**	**F**	**118.6**	**F**
			8:00	**227.2**	**F**	9.6	A	9.4	A	9.4	A
3	SR 37 and Noble Road	TWSC	2:00	**279.8**	**F**	**49.2**	**E**	30.7	D	**45.1**	**E**
			3:00	**624.5**	**F**	13.0	B	**47.2**	**E**	16.6	C

No.	Intersection	Control	Hour (Starting)	No-Build		Build					
						Alt- 3B HOV Scenario 1		Alt- 3B HOV Scenario 2		Alt- 3B HOV Scenario 3	
				Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
			4:00	**1317.3**	**F**	**49.4**	**E**	**181.7**	**F**	**111.3**	**F**
			5:00	**1964.5**	**F**	**63.2**	**F**	**43.0**	**E**	**107.5**	**F**
			6:00	**3197.6**	**F**	5.8	A	7.7	A	7.6	A
			7:00	**77.7**	**F**	5.0	A	5.9	A	6.8	A
			8:00	9.5	A	2.3	A	0.9	A	2.3	A
4	SR 37 and Skaggs Island Road	TWSC	2:00	**184.0**	**F**	14.5	B	12.1	B	12.3	B
			3:00	**195.1**	**F**	8.3	A	8.1	A	7.7	A
			4:00	**175.8**	**F**	13.7	B	12.1	B	12.6	B
			5:00	**129.7**	**F**	9.1	A	9.1	A	8.0	A
			6:00	**245.7**	**F**	8.3	A	6.7	A	6.8	A
			7:00	9.1	A	7.1	A	5.4	A	7.8	A
			8:00	12.3	B	12.6	B	12.8	B	12.5	B
5	SR 37 WB ramps and Walnut Avenue/ Main Gate	TWSC	2:00	11.3	B	10.9	B	10.9	B	10.9	B
			3:00	14.0	B	13.5	B	15.4	C	15.4	C
			4:00	**128.3**	**F**	11.0	B	**49.0**	**E**	**48.1**	**E**
			5:00	**329.6**	**F**	11.0	B	**58.9**	**F**	**57.4**	**F**
			6:00	**207.2**	**F**	14.9	B	14.9	B	14.9	B
			7:00	11.0	B	11.0	B	11.0	B	11.0	B
			8:00	11.0	B	11.0	B	11.0	B	11.0	B
6	SR 37 EB ramps and Walnut Avenue/ Main Gate	TWSC	2:00	12.3	B	5.3	A	5.3	A	5.1	A
			3:00	13.5	B	12.8	B	12.0	B	12.0	B
			4:00	17.4	C	16.4	C	19.0	C	16.1	C
			5:00	12.5	B	12.0	B	12.0	B	12.0	B
			6:00	13.4	B	11.6	B	11.6	B	11.6	B
			7:00	11.3	B	1.8	A	1.8	A	1.8	A
			8:00	1.6	A	1.8	A	12.4	B	12.4	B

Notes:
Alt = Alternative; EB = eastbound; HOV = High Occupancy Vehicle; LOS = Level of Service; SR = State Route; TWSC = two-way stop controlled; WB = westbound

Results are based on the VISSIM simulation average of multiple runs.
1. Average intersection delay expressed in seconds per vehicle.
TWSC intersections analyzed for worst movement.
Bold indicates intersections that are operating at LOS E or F.
Eastbound HOV Commencement Scenarios (HOV scenarios) are described in Section 5, Alternatives.

2025 Mainline Traffic Operations Analysis

Eastbound P.M. Peak Period

The following compares 2025 traffic conditions for the No-Build Alternative and the Build Alternative for Single-Occupancy Vehicles (SOVs) and HOVs during the p.m. peak period in the EB direction.

- Under the No-Build conditions, the maximum travel time is approximately 100 minutes for both SOVs and HOVs, as there is no HOV lane provision.

- Under the Build Alternative, the maximum travel time is approximately 53 minutes for SOVs and 46 minutes for HOVs. The travel time savings for SOVs and HOVs is 47 minutes and 54 minutes respectively compared to No-Build conditions.

- The maximum travel time is approximately 26 minutes for SOVs and 23 minutes for HOVs under Build Alternative Scenario 1, 26 minutes for SOVs and 21 minutes for HOVs under Build Alternative Scenario 2, and 26 minutes for SOVs and 23 minutes for HOVs under Build Alternative Scenario 3. The travel time savings for SOVs and HOVs is 74 minutes and 77 minutes respectively compared with No-Build conditions for Alternative Scenario 1, 74 minutes and 79 minutes respectively for Alternative Scenario 2, and 74 minutes and 77 minutes respectively for Alternative Scenario 3.

- There is no queue remaining at the end of the peak period for the Build Alternative, and the total peak period demand volumes are therefore all served by the end of the peak period.

Westbound A.M. Peak Period

The following compares 2025 traffic conditions under the No-Build Alternative and the Build Alternatives for SOVs and HOVs during the a.m. peak period in the WB direction.

- Under the No-Build conditions, the maximum travel time is approximately 65 minutes for both SOVs and HOVs, as there is no HOV lane provision.

- The maximum travel time is approximately 26 minutes for SOVs and 23 minutes for HOVs under Build Alternative Scenario 1, 26 minutes for SOVs and 21 minutes for HOVs under Build Alternative Scenario 2, and 26 minutes for SOVs and 23 minutes for HOVs under Build Alternative Scenario 3. The travel time savings for SOVs and HOVs is 74 minutes and 77 minutes respectively compared with No-Build conditions for Build Alternative Scenario 1, 74 minutes and 79 minutes respectively for Build Alternative Scenario 2, and 74 minutes and 77 minutes respectively for Build Alternative Scenario 3.

- There is no queue remaining at the end of the peak period for the Build Alternative, and the total peak period demand volumes are therefore all served by the end of the peak period.

2045 Mainline Traffic Operations Analysis

The bullets below compare 2045 traffic conditions of the No-Build Alternative and Build Alternative for SOVs and HOVs during p.m. peak period in the EB direction.

Eastbound P.M. Peak Period

- Under the No-Build conditions, the maximum travel time is approximately 323 minutes for both SOVs and HOVs, as there is no HOV lane provision.

- The maximum travel time is approximately 52 minutes for SOVs and 42 minutes for HOVs under Build Alternative Scenario 1, approximately 67 minutes for SOVs and 54 minutes for HOVs under Build Alternative Scenario 2, and 58 minutes for SOVs and 42 minutes for HOVs under Build Alternative Scenario 3. The travel time savings for SOVs and HOVs is 271 minutes and 281 minutes respectively compared with No-Build conditions for Build Alternative Scenario 1, 256 minutes, and 269 minutes for Alternative Scenario 2, and 265 minutes and 281 minutes for Alternative Scenario 3.

- There is no queue remaining at the end of the peak period for the Build Alternative, and the total peak period demand volumes are therefore all served by the end of the peak period.

Westbound A.M. Peak Period

- Under the No-Build conditions, the maximum travel time is approximately 274 minutes for SOVs and HOVs, as there is no HOV lane provision.

- The maximum travel time is approximately 100 minutes for SOVs and 95 minutes for HOVs under Build Alternative Scenario 1 and approximately 101 minutes for SOVs and 97 minutes for HOVs under Build Alternative Scenario 2 and Scenario 3. The travel time savings for SOVs and HOVs is 174 minutes and 179 minutes respectively compared with No-Build conditions for Build Alternative Scenario 1 and 173 minutes and 177 minutes respectively for Build Alternative Scenario 2 and Build Alternative Scenario 3. Scenario 1 (HOV lane on right side) will have friction between Mare Island on-ramp traffic and HOV traffic, resulting in a slowdown in the HOV lane.

- There is some queue remaining at the end of the peak period under the Build Alternative 3A/3B scenarios, and the total peak period demand volumes are therefore not all completely served by the end of the peak period.

Total Vehicle Miles Traveled, Vehicle Hours Traveled, and Vehicle Hours of Delay

The MTC model was used to evaluate the differences in measures of travel and delay for the No Build Alternative and Build Alternatives for the years 2020 (representing existing), 2025, and 2045. Daily vehicle miles traveled (VMT) indicates the total miles of all vehicle trips, measured by the distance traveled. Vehicle hours of delay (VHD) indicates the total hours that vehicles are delayed as a result of congestion. Vehicle hours traveled (VHT) is the total hours traveled for all vehicle trips. These measures for 2020, 2025, and 2045 are shown and compared in Table 4-14, Table 4-15, and Table 4-16, respectively.

The VMT was modeled for all nine counties of the Bay Area, which is why the daily VMT quantities listed in Table 4-14 and Table 4-15 are relatively large. Modeling the VMT for all Bay Area counties captured the regional changes between alternatives that might occur when trips change or divert because of changes in congestion.

Table 4-14: VMT, VHD, and VHT for 2020 (Existing Conditions)

Description	No Build
Daily VMT	149,948,925
Daily VHD	5,523,543
Daily VHT	8,783,953

Table 4-15: VMT, VHD, and VHT Estimates of No Build and Build Alternatives for 2025 (no tolling)

Description	No Build	Alternatives 3B
Daily VMT	156,255,326	156,264,925
VMT Difference from No Build	Not Applicable	9,599
Daily VHD	6,501,187	6,498,000
VHD Difference from No Build	Not Applicable	-3,187
Daily VHT	9,893,225	9,892,538
VHT Difference from No Build	Not Applicable	-687

Table 4-16: VMT, VHD, and VHT Estimates of No Build and Build Alternatives for 2045 (no tolling)

Description	No Build	Alternative 3B
Daily VMT	181,480,934	181,528,926
VMT Difference from No Build	Not Applicable	47,992
Daily VHD	10,411,762	10,395,826
VHD Difference from No Build	Not Applicable	-15,936
Daily VHT	14,330,313	14,326,880
VHT Difference from No Build	Not Applicable	-3,443

The application of tolling in either one direction only or both directions was modeled for 2025 and 2045. In 2025, the preferred alternative with tolling would result in reduced daily VMT by 16,668 for westbound-only tolls, and by 11,166 when both directions are tolled. In 2045, the preferred alternative with tolling in the westbound direction would result in a net daily VMT reduction of approximately 83,340 from No Build conditions, and a daily reduction of 55,831 with two-way tolling, compared to No Build conditions. The results are shown in Table 4-17, below.

Table 4-17: VMT Estimates of No Build and Build Alternatives with Tolling

Description	No Build	Alternative 3B (one-way tolling)	Alternative 3B (two-way tolling)
2025 Daily VMT	156,255,326	156,238,658	156,244,160
Difference from No Build (2025)	Not Applicable	(-16,668)	(-11,166)
2045 Daily VMT	181,480,934	181,397,594	181,425,103
Difference from No Build (2045)	Not Applicable	(-83,340)	(-55,831)

Results Summary

The Project is expected to improve traffic conditions along SR 37 by adding HOV lanes, which will improve the person-carrying capacity of the corridor and the traffic flow and travel times in the peak directions. The future demand forecast in 2025 along SR 37 with the Project is projected to be slightly higher than the No-Build demand. However, the regional forecast of VMT is projected to be less than the No-Build conditions, with the proposed HOV lane in each direction, and the new added general purpose lane subject to tolling in either one direction or both directions.

The Build Alternative would widen SR 37 within the project limits to four full-time lanes, two lanes in each direction. The Build Alternative would eliminate the bottleneck at the SR 121 intersection and show benefit for both the General Purpose Lane and the HOV Lane. The queues—slowdowns caused when an approaching car is within one car length of a stopped vehicle—are improved in the EB direction compared to the No-Build conditions. Similarly, in the WB direction the Project would improve the conditions at the lane drop west of the Mare Island interchange. The queue backup, which extends up to 20 miles under the No-Build Alternative, would be reduced significantly to approximately 5 miles in the WB direction. In addition, intersection traffic would be improved under the Build Alternative.

Collision Analysis

Collision Information

Collision data for SR 37 within the project limits was provided by Caltrans Traffic Accident Surveillance and Analysis System–Transportation System Network (TASAS-TSN) for the most-recent available 3-year period (January 1, 2016, to December 31, 2018). Table 4-18 summarizes the collision data for both directions of SR 37 from west of the SR 37 / SR 121 intersection to the Sonoma County line. Table 4-19 summarizes the collision data for both directions of SR 37 from the Sonoma/Solano County line to the Walnut Avenue interchange. The data indicate that the total actual collision rate within the limits indicated is approximately twice as high as the average total collision rate for similar facilities statewide.

Table 4-18: Caltrans 3-Year Collision Analysis for West of SR 37 / SR 121 Intersection to Sonoma County Line (January 1, 2016, to December 31, 2018)

Description	No. of Collisions			Actual Collision Rates within Project Limits (col/mvm)*			Average Collision Rates for Similar Facilities Statewide (col/mvm)		
	Total	F	I	F	F + I	Total	F	F + I	Total
From west of SR 37 / 121 intersection to Sonoma/Solano County line (Son-37–PM 3.15/6.2)	312	0	119	0	**0.98**	**2.57**	0.014	0.27	0.63

Source: Caltrans, TASAS
* **Bold** indicates actual collision rate within project limits that is higher than the corresponding average collision rate for similar facilities statewide.
Notes:
Caltrans = California Department of Transportation
col/mvm = collision(s) per million vehicle-miles
F = fatal collision(s)
I=injury collision(s)
Son = Sonoma County
SR = State Route
TASAS = Traffic Accident Surveillance and Analysis System

In this segment of highway, there were a total of 312 reported collisions for the most-recent available 3-year period. Queuing in the WB direction typically begins at 6 a.m. and ends at 10 a.m. Queuing in the EB direction typically begins between 2 p.m. and 3 p.m. and ends at 7 p.m. Thirty-three collisions, or 1.1%, occurred between 6 a.m. and 10 a.m. in the WB direction, and 204 collisions, or 65.4 %, occurred between 2 p.m. and 7 p.m. in the EB direction. Two hundred thirty-eight collisions, or 76.3% of all collisions, occurred in the EB direction and 74, or 23.7%, occurred in the WB direction.

Nineteen collisions, or 6.1%, involved one vehicle. Two hundred ninety-three collisions, or 93.9% of all collisions, involved two or more vehicles. Forty-seven collisions, or 15% of all collisions, involved a truck.

Seventy-eight collisions, or 25% of all collisions, were sideswipes; 205 collisions, or 65.7% of all collisions, were rear-end collisions; and 16 collisions, or 5.1%, were hit-object collisions. Two hundred twenty-eight collisions, or 73.1%, occurred during daylight. Two hundred fifty-two collisions, or 80.8% of all collisions, occurred on a clear day.

Speeding was the primary collision factor for 175 collisions, or 56.1% of all collisions. Driving under influence was the primary collision factor for 7 collisions, or 2.2% of all collisions. Improper turn was the primary collision factor for 32 collisions, or 10.3% of all collisions.

The actual fatal plus injury collision rate and the actual total collision rate for this highway segment are above the corresponding average collision rates for similar facilities statewide.

Based on the majority of collisions occurring at the area of highest congestion during the congestion period, most of the collisions appear to be congestion-related. There is a merge point from two lanes to one lane in the EB direction approximately 300 feet east of the SR 37 / SR 121 intersection. This merge point creates congestion between the merge point and the intersection. Because the project will reduce congestion and reduce the number or

frequency of congestion-related collision types such as rear-end and sideswipe collisions, the overall collision rate is expected to be reduced.

Table 4-19: Caltrans 3-Year Collision Analysis from Sonoma/Solano County Line to Walnut Avenue Interchange (Sol PM 0.0 to R7.4) (January 1, 2016, to December 31, 2018)

Description	No. of collisions			Actual Collision Rates Within Project Limits (col/mvm)*			Average Collision Rates for Similar Facilities Statewide (col/mvm)		
	Total	F	I	F	F + I	Total	F	F + I	Total
From Sonoma/Solano County line to Walnut Avenue IC (Sol-37– PM 0.0/R7.4)	194	1	50	0.003	0.17	**0.67**	0.014	0.28	0.65

Source: Caltrans, TASAS
* **Bold** indicates actual collision rate within project limits that is higher than the corresponding average collision rate for similar facilities statewide.
Notes:
Caltrans = California Department of Transportation
col/mvm = collision(s) per million vehicle-miles
F = fatal collision(s)
I = injury collision(s)
IC = interchange
PM = post mile(s)
Sol = Solano County
TASAS = Traffic Accident Surveillance and Analysis System

In this segment of highway, there were a total of 194 reported collisions for the most-recent available 3-year period. Queuing in the WB direction typically begins at 6 a.m. and ends at 10 a.m. Queuing in the EB direction typically begins between 2 p.m. and 3 p.m. and ends at 7 p.m. Eighty-one collisions, or 41.8%, occurred between 6 a.m. and 10 a.m. in the WB direction and 46 collisions, or 23.7 %, occurred between 2 p.m. and 7 p.m. in the EB direction. Sixty-five collisions, or 33.5% of all collisions, occurred in the EB direction and 129, or 66.5%, occurred in the WB direction.

Thirty-two collisions, or 16.5% of all collisions, involved one vehicle. One hundred sixty-two collisions, or 83.5% of all collisions, involved two or more vehicles. Fifty-four collisions, or 27.8% of all collisions, involved a truck.

Fifty-eight collisions, or 29.9% of all collisions, were sideswipes; 96 collisions, or 49.5% of all collisions, were rear end collisions; 20 collisions, or 10.3% of all collisions were hit-object collisions. One hundred twenty-nine collisions, or 66.5% of all collisions, occurred during daylight hours. One hundred forty-nine collisions, or 76.8% of all collisions, occurred on a clear day.

Speeding was the primary collision factor for 93 collisions, or 47.7% of all collisions. Driving under the influence was the primary collision factor for 7 collisions, or 3.6% of collisions. Improper turn was the primary collision factor for 32 collisions, or 16.5% of all collisions.

The actual total collision rate for this highway segment is slightly above the statewide average for similar facilities. The actual fatal and fatal plus injury for this highway segment are below average statewide rates.

Based on the large percentage of collisions occurring at the area of highest congestion during the congestion period, most of the collisions were congestion-related. There is a merge from two lanes to one lane in the WB direction at about 0.25 mile west of the Walnut interchange. This merge causes congestion during morning peak periods. Because the project will reduce congestion and reduce the number or frequency of congestion-related collision types such as rear-end and sideswipe collisions, the overall collision rate is expected to be reduced.

Traffic Safety Analysis

A qualitative safety analysis has been performed and the project is expected to reduce collisions as discussed in the collision analysis above. A draft Traffic Safety Analysis was prepared by Kittelson and Associates in May 2020. Preliminary results of the safety analysis indicated that the proposed Build Alternative is expected to lower the annual crash frequency compared to the No-Build condition, with other design elements such as guardrail, lighting, and wider markings to improve safety. A traffic safety focus meeting was held on January 22, 2021, to discuss the comments and responses. It was agreed that there is no crash prediction model in the Highway Safety Manual (HSM) or Crash Modification Factor (CMF) available in the FHWA's CMF Clearinghouse that quantifies the effect of MMBs on crashes.

The HSM Analysis Memorandum a quantitative analysis for the Build Alternative. The HSM Analysis Memorandum noted that this analysis only includes the design elements that can be analyzed quantitatively with well-established crash modification factors applicable for the study corridor based on existing literature. After accounting for correlation and/or the additional design elements not analyzed, the expected changes in safety performance could increase or decrease.

The analysis also concluded the Build Alternative could lower the expected average crash frequency on Segment B by 14% based on the CMFs for lane widths and shoulder widths that can apply to all crashes. It is not possible to draw an overall quantitative conclusion considering all treatments given the variations in the applicability of CMFs to crashes and the inability to fully account for the correlation between the individual CMFs. Therefore, this analysis provides an overall qualitative conclusion that the Build Alternative is expected to provide safety improvement. The analysis concluded that the Project could lower the expected average crash frequency based on CMFs for lane widths and shoulder widths that can apply to all crashes.

Based on the HSM Safety Performance Functions (SPFs) for a four-lane facility, widening the segment to four lanes is anticipated to reduce the expected base crash frequency. This could be attributed to reduced queuing and congestion on Segment B and adjacent segments. These operational changes could result in reduced conflicts caused by congestion. However, because the lane is only open to HOV traffic during peak periods and there is no crash prediction model in the HSM or CMF available in the FHWA's CMF Clearinghouse to estimate potential safety benefits due to the addition of an HOV lane. The benefit during peak periods could not be quantitatively estimated.

Sonoma Creek Bridge was evaluated as a 0.33-mile segment with bridge-specific designs. The Build Alternative was estimated to lower the expected average crash frequency on

Sonoma Creek Bridge by 37.5% based on the CMFs for lane widths and shoulder widths that can apply to all crashes. Similar assumptions and limitations as discussed for the segment analysis also apply for the bridge analysis. Therefore, the resulted percentages should be considered as an estimate for the impact for the proposed alternative. Overall, the Build Alternatives is expected to improve the overall safety performance on Sonoma Creek bridge based on the change in facility type (two lanes to four lanes).

The analysis also evaluated the safety impact of intersection designs at three locations: Noble Road, Skaggs Island Road, and Cullinan Ranch Access Road. Converting Noble Road and SR 37 to signal control is expected to lower crash severity at the location. For all three intersections, treatments such as advance warning signs and signal ahead warning flashing beacons are expected to lower average crash frequency. Given the variations in the applicability of CMFs to crashes and the inability to fully account for the correlation between the individual CMFs, an overall predicted change in safety performance cannot be fully concluded.

Safety Improvements

The proposed improvements would provide increased capacity which will help reduce congestion-related collisions. The existing Type 50 32-inch-high concrete median barrier will be replaced with a 36-inch-high Type 60 MS MASH compliant concrete barrier.

Approximately 18.2 miles of Midwest Guardrail System would be placed at the edge of the outside shoulder (9.1 miles in each direction) due to the presence of permanent bodies of water on each side of the highway. Advanced intersection warning signs with flashing beacon will be installed ahead of all the intersections (Noble Road, Skaggs Island Road, Cullinan Ranch Road) and are expected to reduce collision frequency.

At Noble Road, providing left-turn and right-turn lanes is expected to reduce total collisions. Signalizing the intersection is expected to reduce overall collision severity at the intersection.

At Sonoma Creek Bridge, an enhanced advisory sign package including and advisory speed limit of 45 mph has been implemented on the field. A Variable Speed Limit Sign (VSLS) system will be implemented in both directions at the Sonoma Creek Bridge and approaches to enhance safety and to accommodate pedestrians and bicycles across Sonoma Creek Bridge. The VSLS system signs will display the regulatory posted speed limit of 40 mph when pedestrians and/or bicycles are present on the bridge.

The existing posted speed limit along SR 37 west of SR 121 is 50 mph and is 55 mph east of SR 121. Caltrans, in collaboration with California Highway Patrol (CHP), plans to reduce the posted speed limit to either 45 mph or 50 mph for the segment from the SR37/SR121 intersection to east of Sonoma Creek Bridge in 2023 due to the traffic congestion pattern and roadway geometrics to enhance safety. The design speed for SR 37 west of SR 121 is 55 mph and is 60 mph east of SR 121. The project will perpetuate the existing and Caltrans' planned posted speed limits through the corridor except for Sonoma Creek Bridge as described above.

5. ALTERNATIVES

5A. Viable Alternatives

Selection of Preferred Alternative

After completion of the Draft Project Report and circulation of the Draft Environmental Document, the PDT identified Build Alternative 3B as the Preferred Alternative. This decision was made after a series of PDT meetings conducted in March and April 2022 that involved review of the environmental impacts associated with each alternative, safety, design criteria and concerns, traffic benefits and performance of the alternatives, maintenance, and consideration of public and agency comments and concerns. The PDT identified Alternative 3B as the Preferred Alternative at the March 25, 2022, meeting contingent on further review of the potential to reduce construction impacts and the widening of the Sonoma Creek Bridge and review of input on the alternatives received from the California Highway Patrol (CHP) regarding safety concerns and input from the Caltrans Division of Maintenance. Additional PDT meetings were held on April 8 and 14, 2022, and a final meeting on April 21, 2022, confirmed the PDT's decision to select Alternative 3B as the Preferred Alternative. During the course of project development, the PDT had considered the information in the technical studies completed for the project, the information in the DEIR/EA, comments received during the public scoping period and public review period for the DEIR/EA, the public scoping meeting and the public meeting held after release of the DEIR/EA, and discussion and input from the PDT members since initiation of the environmental review and preliminary engineering studies and evaluations in 2019.

Preferred Alternative 3B: Widen to Four Full-Time Lanes with 8-Foot Shoulders, Begin Eastbound HOV Lane on the Left Side West of SR 121, Widen Tolay Creek and Sonoma Creek Bridges and Provide Improvements at Three Intersections

The Preferred Alternative will reconfigure the existing SR 37 highway lanes from west of the SR 121 intersection to the Walnut Avenue Overcrossing at Mare Island; would widen the Tolay Creek Bridge; have four lanes, with two full-time lanes in each direction; have 8-foot shoulders (except at Sonoma Creek Bridge, which would have 4-foot shoulders); would require widening the Sonoma Creek Bridge; and signalize SR 37/Noble Road intersection. The preferred alternative would introduce the eastbound HOV lane at the SR 121/SR 37 intersection vicinity, with the HOV lane on the left side, about 0.6 mile west of SR 121, and extend the eastbound left-turn lane approximately 0.5 mile west. The westbound HOV lane on the left side will commence at Mare Island Interchange.

The added lanes would be for general purpose use, subject to tolling. The existing lanes would convert to HOV lanes and operate 24 hours/day, 7 days a week in both directions. The project also would install advance signs to alert drivers approaching the proposed HOV lanes. The project includes the installation and operation of Open Road Tolling (ORT) on the new general purpose lanes. The preliminary layout of the Preferred Alternative is shown in Attachment B and typical cross sections are shown in Attachment C.

Proposed Engineering Features

This project will widen the highway to provide four full-time lanes (two in each direction of SR 37 The inside lane (left-side lane) would function as HOV use 24 hours per day, 7 days a week in both directions to incentivize a mode shift from SOVs in both directions. Static signs are proposed to manage the lanes. Proposed features include the following:

- In each direction of SR 37, there will be a 2-foot inside (left) shoulder, an 11-foot inside lane, a 12-foot outside lane, and an 8-foot outside (right) shoulder, except at Sonoma Creek Bridge, for a total roadway minimum width of 68 feet. The WB and EB lanes would be separated by a 6-foot wide median with concrete barrier and 2-foot inside (left) shoulders on either side.

- The Sonoma Creek Bridge will be widened to accommodate two 11-foot wide lanes, a 2-foot wide concrete median barrier, 1-foot wide inside (left) shoulders and 4-foot outside (right)shoulders in both directions of SR 37 for a total roadway width of 56 feet. The widening of this bridge will be on both sides of the bridge. The existing concrete median barrier along the bridge will also be replaced with a 36-inch high concrete barrier. A Type 836 barrier will be placed in both directions as outside bridge railing. At Sonoma Creek Bridge, an enhanced advisory sign package including an advisory speed limit of 45 mph has been implemented. Also, at Sonoma Creek Bridge, bicycle/pedestrian detection will be implemented. A Variable Speed Limit Sign (VSLS) system will be implemented in both directions at the Sonoma Creek Bridge and approaches to enhance safety, specifically for pedestrians and bicycles who may be accessing the shoulders across Sonoma Creek Bridge. The VSLS system signs will display the regulatory posted speed limit of 40 mph when pedestrians and/or bicycles are present on the bridge.

- Temporary construction access will be necessary at and beneath the Sonoma Creek Bridge for access to the railings and underside of the bridge deck. A temporary barge may be needed for work within Sonoma Creek.

- The Tolay Creek Bridge is a single-span bridge that will be widened on both sides to accommodate the additional lanes. The existing abutments will be widened. The existing Tolay Creek channel will remain the same width, and no work is proposed in the channel except potential temporary construction access. Both sides of Tolay Creek Bridge will be widened to accommodate one 12-foot wide lane, one 11-foot wide lane, and an 8-foot wide right (outside) shoulder in the WB direction, and two 12-foot wide lanes, one 11-foot wide lane, an 8-foot right (outside) shoulder in the EB direction, and a 6-foot wide median with a new 2-foot wide concrete barrier for total roadway width of 80 feet.

- There will be two lanes in each direction of SR 37 during all hours; however, the inside lane (left-side lane) in each direction will be restricted to use as an HOV Lane.

- The EB HOV Lane will begin approximately 0.6 mile west of the SR 121 intersection. The WB HOV lane will begin immediately west of the Mare Island on-ramp.

- To accommodate merging, two General Purpose Lanes and one HOV Lane in the EB direction will continue east of the SR 121 intersection. Then, one General Purpose Lane will drop and merge approximately 0.3 mile east of this intersection.

- The EB direction west of SR 121 will be widened for approximately 0.8 mile to accommodate the EB HOV Lane and extend the EB left-turn lane to the west.

- The existing 32-inch high (Type 50) median barrier will be replaced with a 36-inch high concrete Type 60MS barrier between the SR 121 intersection with the Mare Island interchange for approximately 9.2 miles. The Type 60MS barrier restricts the ability to accommodate future pavement overlays. Future maintenance projects will need to maintain the roadway profile and the height of the Type 60MS barrier and include a mill and overlay strategy as part of the pavement maintenance program.

- SR 37 / Skaggs Island Road intersection will remain as an at-grade tee intersection and will be stop-controlled at Skaggs Island Road. Along EB SR 37, an approximately 130-foot long left-turn pocket will be constructed. Southbound traffic on Skaggs Island Road will access EB SR 37 by crossing two lanes of WB SR 37 traffic and use an approximately 100-foot long acceleration lane. Along WB SR 37, an approximately 50-foot long right-turn deceleration lane will be constructed to access Skaggs Island Road (similar to the existing condition).

- The Cullinan Ranch Restoration Area driveway on WB SR 37 will remain a right-in and right-out only driveway.

- The SMART railroad crossing signals and arms will be reconstructed to accommodate the wider roadway section.

- The SR 37 / Noble Road intersection will be signalized.

- Approximately 9.1 miles of existing outside shoulder will be reconstructed and converted to a travel lane pavement section and shoulder pavement section in each direction of SR 37.

- Approximately 18.2 miles of Midwest Guardrail System (MGS) will be placed at the edge of the outside shoulder (9.1 miles in each direction).

- The public access driveways on each side of Sonoma Creek, the existing intersection access at SR 121 / Sears Point Road / Tolay Creek Road, the driveway to the San Pablo Bay National Wildlife Refuge office, and other private gated driveway access points will be maintained.

- The Project proposes 1:1 side slopes where widening is required to minimize right of way and environmental impacts. Between SR 121 and Sonoma Creek Bridge, sheet pile walls are proposed along the edge of the roadway for pavement confinement and to minimize settlement. Between the Sonoma Creek Bridge and Mare Island, the proposed roadway widening will be on an embankment.

- The following interrelated Traffic Operation Systems (TOS) design elements will be considered during the Design phase to improve and maintain safety on the project:

    - Incident detection and response: The area of the Project is continually monitored by closed-circuit television to minimize emergency response times for stalled vehicles and to quickly resolve collisions/roadside emergencies.

    - Implementation of active transportation and demand management similar to a smart corridor concept that includes transit signal priority, a real-time corridor performance monitoring system, and other items. The system could include automated incident detection and management, end of queue protection, variable advisory speeds, vehicle speed feedback, active curve warning, weather/flood detection and warning, and regional data sharing.

The Preferred Alternative will provide 8-foot outside (right) shoulders between SR 121 and Mare Island, similar to the existing shoulder widths except at Sonoma Creek Bridge, which will have 4-foot outside (right) shoulders. The Preferred Alternative will be able to accommodate bicycles and pedestrians across the entire segment of the Project limits, including Sonoma Creek Bridge. See Attachment B for preliminary layout and Attachment C for typical cross sections.

Caltrans will continue to examine opportunities to further refine the project's construction footprint (the area of construction) during the project's design phase with the intention of further reducing environmental impacts of the project.

Eastbound HOV Commencement

The Preferred Alternative will introduce the EB HOV Lane in the vicinity of the SR 121 / SR 37 intersection. The Preferred Alternative will introduce the EB HOV Lane on the left side about 0.6 mile west of SR 121 and will extend the EB left-turn lanes to northbound SR 121 by approximately 0.5 mile to the west. The EB left-turn lane will begin approximately 0.7 mile west of the intersection and will widen to two left-turn lanes approximately 0.1 mile west of the intersection. The second EB left-turn lane will be approximately 400 feet long and terminate at SR 121. The EB direction will be widened to accommodate two left-turn lanes, one HOV Lane, and two General Purpose Lanes with 8-foot outside shoulders. The WB lane configuration will be maintained with two General Purpose Lanes west of the intersection. East of the intersection, the WB approach will consist of two General Purpose Lanes and one left-turn lane. The WB off-ramp to northbound SR 121 diverges from the outer lane just west of the railroad crossing. Southbound SR 121 will be widened to include a through lane to access Tolay Creek Road on the opposite side of SR 37.

Based on discussions with the PDT, consensus was reached that for all alternatives, introducing the EB HOV lane on the left side approximately 0.6 mile west of SR121 was the most appropriate scenario for implementation on this Project.

The project capital cost estimate and environmental impact areas for the Project in this document are based on this EB HOV lane commencement scenario.

Horizontal and Vertical Alignment

The alignment of the widened facility for will conform to the horizontal and vertical control established for the existing roadway. However, there are several nonstandard horizontal and vertical design elements that do not meet current design standards. These nonstandard features are documented in the Design Standards Decision Document and are provided in Table 5-1.

Tolling

Implementation of ORT on SR 37 between SR 121 and the Mare Island interchange is proposed as part of this Project. Tolling is proposed on the new general purpose lane. Tolling authority approval will be requested through the existing California Transportation Commission's (CTC) tolling program, authorized under SHC 149.7. No additional legislation is required. The tolling application will be prepared and submitted for the CTC March 2023 Commissioners meeting for the approval. The project team had preliminary discussions with CTC staff in October of 2022, and CTC staff had indicated support on the proposed tolling on SR 37.

Senate Bill 1050 MTC SR 37 Toll Bridge Act was proposed in 2022 but did not pass. This bill would have authorized MTC to apply to the CTC for high-occupancy toll lanes or other toll facilities on existing and proposed lanes on SR 37, and create an SR 37 Toll Authority.

The existing travel lane will be converted to an HOV lane in each direction, and would be designated for HOV use 24 hours per day (a full-time HOV lane), but the HOV lanes would not be tolled.

Tolling is expected to begin at the opening day of operation. Tolling infrastructure, including up to two toll gantries, will be constructed as part of the Project..

Two methods of toll collection are being considered. The first is westbound-only tolling in the project corridor, similar to the seven state-owned tolled bridges in the Bay Area (such as the Richmond–San Rafael Bridge). The second is EB and WB tolling at half of the toll rate for each direction. Only the new general purpose lane would be tolled, either in one direction or both directions; the existing lane will be converted to HOV and would not be subject to tolling. Means-based toll discounts will be evaluated as part of the tolling plan within the overall program parameters. Tolls would be collected through ORT and All-Electronic Tolling, which involves cashless free flow tolling; therefore, toll booths would not be required.

Tolls would be collected electronically using transponders carried in the vehicles, and vehicles without transponders would be billed by identifying the owner of the vehicle through images of the license plates. The traffic analysis and forecasting for tolling was completed to a level of detail to support the Environmental Document and, understand and report the effects of tolling. Additional analysis will be conducted during the design phase to refine the analysis before tolling is implemented on SR 37.

Up to two overhead gantries will be needed for tolling. Tolls would be collected electronically when vehicles using the general purpose lane cross beneath the toll gantry(s). Tolls would not be collected, or apply to vehicles using the proposed HOV lane, in either the westbound or eastbound direction of travel. An overhead gantry would be installed on SR 37, spanning both directions approximately 0.2 mile west of the Mare Island overcrossing. If final design determines the second gantry is needed, it will span both directions just east of Tolay Creek Bridge and east of the SR 121 intersection. Locations of the gantries would be determined during final design. Overhead readers and cameras will be installed on the gantries that will read vehicle transponders and photograph vehicle license plates. For visual simulations of the toll gantries, see Attachment M.

Toll Rates and HOV Lane Enforcement

VMT is influenced by tolling rates. A higher toll rate results in a higher cost of driving, which helps influence decisions to carpool, take transit/bus service, or not to drive. If necessary, toll rates can be increased to reduce VMT in the proposed toll lane in either one or both directions. Any decision to change toll rates would be made by the tolling authority for SR 37, with input from Caltrans, MTC, and the project's agency partners and based on evaluation of traffic volume changes using the performance measures described in the Project Environmental Impact Report, or equivalent measures. In the HOV lane in each direction, HOV enforcement can also be increased to reduce HOV violations. Either one or both of these strategies (toll rates and/or increased enforcement) can be applied if necessary to meet VMT performance measures. This is also included as a VMT performance measure in the Final EIR/EA.

Management of the HOV lanes will be required on SR 37, to achieve reasonable compliance with the intended use of the lanes for multi-occupant vehicles. Having a tolled lane adjacent to an HOV lane will require enforcement or barriers to minimize HOV lane violations (a violation is the use of an HOV lane by a vehicle that does not qualify to be in the HOV lane based on vehicle occupancy). Section 5A describes the proposed project features that will be constructed as part of the project, and the highway operations that will be applied. These include the installation of CHP observational areas (where CHP officers can monitor traffic and pursue HOV violations), HOV users will be required to carry and use a transponder accurately set to the vehicle occupancy, advance HOV lane signage will be installed above and adjacent to the HOV lanes, and pavement markings and striping will be used to identify the lanes.

Caltrans has established a goal to achieve a violation rate of ten percent or less. Caltrans, the CHP, and the project's sponsoring partners will establish an agreement on a goal for an

acceptable violation rate for SR 37, and funding or support for CHP enforcement. See "HOV Enforcement" section below for additional discussion.

Signs and Lighting

New roadside and/or overhead signs will be placed along SR 37 in each direction, in advance of the beginning of the HOV Lanes, to inform drivers of the upcoming toll zone. The types of new signs will include:

- Signs along the side of the highway notifying drivers of the upcoming HOV Lane. These will include information on the number of occupants for a qualifying HOV user, the hours of operation of the HOV Lane, and penalties for single-occupant vehicles using the HOV Lane.

- Overhead and roadside signs. These will be installed to notify and inform drivers of the upcoming tolling zone and the applicable toll, and penalties for enforcement of the toll.

- Roadside signs for the upcoming exit ramps. These already exist along SR 37.

Overhead signs will require subsurface foundations within the median or alongside the highway. Subsurface excavation for the overhead signs may be up to 60 feet in vertical depth, depending on the subsurface conditions.

Lighting will be added along the corridor in advance of the tolling gantries, along four horizontal curves between SR 121 and just east of Sonoma Creek Bridge, and at CHP observational areas. Lighting may also be added at local road intersections to improve safety for vehicles entering or exiting the highway.

CHP Observational Areas

Observational areas for CHP vehicles to park, monitor, and enforce compliance with the HOV Lanes and tolling will be installed at the beginning of the HOV Lane and toll lane, at or near the toll gantries. Based on information provided by the CHP during the November 17, 2021, Traffic Incident Management Plan and Enforcement discussions, the CHP has reviewed the proposed Build Alternatives and indicated it can perform enforcement with the Preferred Alternative. CHP will observe from the Mixed Flow Lane and enforce the HOV Lane from there. They will use the proposed shoulders to pull over violators.

HOV Enforcement

The CHP will be the responsible agency for conducting High Vehicle Occupancy (HOV) lane enforcement. The project proposes to facilitate enforcement by providing the following features:

- CHP observation areas will be placed ahead of the toll gantries. The observation areas will allow sufficient room for an officer to park a vehicle and observe vehicles that are traveling in the HOV lane approaching the toll gantry. Similar to the toll bridges

in the Bay Area, the officer would conduct an observation of the vehicle approaching the toll gantry to determine whether that vehicle qualifies to use the HOV lane. Should there be a violator, the enforcement could be conducted either at the Cullinan Ranch Staging Area or the Sonoma Creek Viewing Area for westbound enforcement or at the CDFW Tubbs Island staging area or the Sonoma Creek Viewing Area in the eastbound direction.

- Similar to other toll bridges in the Bay Area, it is expected that all users on SR 37 within the limits of this project will be required to carry a FasTrak® transponder. It is an enforceable violation to use a toll lane without a toll tag (California Vehicle Code Section 23302). The reading of the transponder would allow the number of declared occupants in a vehicle to be displayed on a LED panel mounted on the toll gantry that can be easily seen by a CHP officer stationed at the observation area. The display of the declared number of occupants will aid the CHP with enforcement.

- HOV eligible traffic approaching the toll gantries would be funneled through a HOV lane that is introduced ahead of the CHP enforcement observation areas and toll gantries. This would segregate SOV from HOV for tolling and enforcement purposes.

- Advanced overhead HOV signs would be placed providing HOV requirements, hours of operation and minimum violation rates.

- HOV signs mounted on median barriers will be placed throughout the corridor providing HOV requirements, hours of operations and minimum violation rates.

- HOV pavement markings will be placed on the HOV lane.

- Placement of a solid white strips separating the HOV lane from the general purpose lane will be considered.

HOV Lane Transition

Transition lanes are included where the HOV Lanes begin. At the eastern end of the project, there will be three lanes in the WB direction: one HOV Lane and two General Purpose Lanes from WB SR 37. The westbound on-ramp from Walnut Avenue merges into the outer General Purpose Lane just as the WB HOV Lane begins about 700 feet west of Napa River Bridge. The WB outside lane will then drop and merge with the inside Mixed Flow Lane approximately 0.25 mile west of the WB HOV Lane commencement. This area will allow HOV users to change lanes and transition to the HOV Lane. The two lanes will continue west (one HOV Lane and one General Purpose Lane).

In the EB direction of SR 37 approaching the SR 121 intersection, the existing highway consists of two through EB lanes and two left-turn lanes. The EB HOV Lane will be added approximately 0.6 mile west of the SR 121 intersection. The HOV Lane and two General Purpose Lanes will continue east of the SR 121 intersection. The second, outside General Purpose Lane will drop and merge with the other General Purpose Lane approximately

0.3 mile west of the intersection. Two lanes will continue east (one HOV Lane and one General Purpose Lane).

Outside Safety Barriers

The existing highway has metal beam guardrail barriers at the approaches to local street intersections and the Sonoma Creek and Tolay Creek bridges. Additional outside barriers will be needed to meet current traffic safety requirements. Approximately 18.2 miles of MGS will be placed at the edge of the outside shoulder (9.1 miles in each direction).

Slope Protection and Reinforcement

The majority of SR 37 is originally constructed on fill. There are areas of recurring settlement and pavement distress. Where settlement has occurred or minor widening of the existing cross section of the highway is needed to accommodate the proposed improvements, reinforcement of the highway section is proposed. Design measures will include driving sheet piles along the edges of the highway shoulder area to help stabilize the roadway and slopes. Sheet piles typically consist of metal sheeting that are driven into the earth to form a subsurface wall that helps support the roadbed and helps prevent or reduce uneven settlement. Once installed, the sheet piles will not be exposed or will be minimally exposed where they are functioning as a retaining wall. In addition to sheet piles, rock slope protection may be added or reinforced, or engineered slopes may be installed. These measures will be designed to help correct existing recurring deformation of the SR 37 roadway structural section and to allow for minimal widening of the roadbed to accommodate the proposed new lanes and improvements.

Tolay Creek and Sonoma Creek Bridges

Two creek crossing bridges are within the project limits: one at Sonoma Creek and the other at Tolay Creek. The Sonoma Creek Bridge has been previously widened for seismic strengthening and placement of a concrete median barrier. As previously described, the Sonoma Creek Bridge will require widening, involving temporary staging and equipment at the creek. Temporary construction access will be necessary at and beneath the bridge for access to the railings and underside of the bridge deck. A temporary barge may be needed for this purpose within Sonoma Creek. Sonoma Creek Bridge is a US Coast Guard (USCG) permitted bridge and widening it may require a Bridge Permit or amendment from the agency.

The Tolay Creek Bridge is a single-span bridge that will be widened on both sides to accommodate the additional lanes. The existing abutments will be widened. The existing Tolay Creek channel will remain the same width, and no work is proposed in the channel except potential temporary construction access. The replacement of the Tolay Creek Bridge was considered by the PDT in October 2021, but the PDT decided to widen but not replace the bridge.

Requests to lengthen Tolay Creek Bridge were submitted as part of public comments on the Draft EIR/EA, with the goal of enhancing tidal prism (volume) currently constrained by the bridge. Lengthening the bridge would result in a wider channel, enhance wetlands and other

waters in the project area, benefit special status species that utilize these habitats, and enable upstream Baylands restoration identified as part of the Sonoma Creek Baylands Restoration Strategy (May 2020). Caltrans and the project sponsors will examine Tolay Creek Bridge lengthening/replacement potentially as a separate effort, including any necessary environmental impact evaluation and public review. A bridge lengthening/replacement will be determined in coordination with regulatory agencies as part of project permits.

Local Road Intersections

SR 37 is a conventional highway, with connecting crossroads. These include access to Tolay Creek Road / Sears Point Road, Skaggs Island Road, Noble Road (providing access to Vallejo Flood and Wastewater District and Wing and Barrel Ranch), unnamed access roads, vista points and trailheads, and parking areas. The local road connections are summarized below:

- Noble Road: A traffic signal will be added. This is a lightly traveled road and the signal will only activate when a vehicle approaches the SR 37 Noble Road intersection.

- Skaggs Island Road: This road is a gated road and is stop controlled at Skaggs Island Road to enter SR 37. Vehicles will continue to be permitted to cross opposing traffic to make a left turn from WB SR 37 into Skaggs Island Road, and from Skaggs Island Road onto EB SR 37.

- Cullinan Ranch Restoration Area driveway: This driveway will remain right-in and right-out only.

The public access driveways on each side of Sonoma Creek, the existing intersection access at SR 121 / Sears Point Road / Tolay Creek Road, the driveway to the San Pablo Bay National Wildlife Refuge office, and other private gated driveway access points will be maintained.

SMART Railroad (Northwestern Pacific Railroad)

This railroad line crosses SR 37 at grade between Tolay Creek and the SR 121 intersection. It is an active railroad, and there are crossing signals and swing arm barriers that activate when a train is approaching. The crossing signals and arms will need to be reconstructed to accommodate the additional proposed lanes. California Public Utilities Commission (CPUC) General Order 88-B authorization and coordination will be required to modify the existing railroad grade crossing.

Drainage and Culverts

A Location Hydraulic Study Report and a Drainage Impact Study Report that identify existing hydrologic and hydraulic conditions, highway drainage design elements, and hydrologic and hydraulic design standards were prepared for the Project.

There are three major waterways that flow through the Project corridor that could be impacted by the Project: Tolay Creek, Sonoma Creek, and Napa River (and their tributaries). All three waterways drain to and are tidally influenced by San Pablo Bay. The Preferred

Alternatives proposes adding impervious areas that will increase stormwater flows going to the existing waterways. Treatment of this additional runoff will be incorporated along the highway where space permits, but because of the constrained nature of the roadway, off-site treatment options will be needed.

No changes to the existing drainage patterns are anticipated, other than the addition of pavement along the corridor. Runoff from the roadway primarily sheet-flows off-site or is collected along asphalt concrete dikes and drained to roadside ditches or waterways. At superelevation locations, there are median storm drain systems that outlet to roadside ditches and waterways. The project will extend or replace existing cross culverts, culvert crossings at cross drives, median drainage systems , and existing treatment media filters and biofiltration trenches. Existing asphalt concrete dikes will be removed, and rock slope protection will be added to side slopes in certain areas. The Project will preserve existing drainage patterns to the extent feasible.

Traffic Operations System

TOS monitoring and motorist information systems such as closed-circuit television, video monitoring and vehicle detection, changeable message signs (CMSs), extinguishable message signs, and Traffic Monitoring Systems linked with the District Traffic Management Center are included in the Preferred Alternative.

Nonstandard Boldface and Underlined Design Features

The phrase “Boldface design standards” refers to the Boldface standards outlined in Caltrans Highway Design Manual, Table 82.1A, while the phrase “Underlined design standards” refers to the Underlined standards outlined in Caltrans Highway Design Manual, Table 82.1B. Caltrans Project Development Procedures Manual Chapter 21 defines Boldface design standards as those considered most essential to achievement of overall design objectives. Underlined design standards are important also but allow greater flexibility in application to accommodate design constraints or be compatible with local conditions on resurfacing or rehabilitation projects.

The proposed project meets the Caltrans boldface and underlined design standards outlined in the Caltrans Highway Design Manual (HDM) for conventional highway facilities on SR 37, with the exceptions that are listed in Table 5-1. There are existing and proposed nonstandard design elements that do not meet the current design standards. Exceptions from Boldface and Underlined design standards are required under the Preferred Alternative. These nonstandard features are documented in the Design Standard Decision Document (DSDD) for the project, which was approved on February 3, 2023. The posted speed limit along SR 37 west of SR 121 is 50 mph and is 55 mph east of SR 121. The design speed for SR 37 west of SR 121 is 55 mph and is 60 mph east of SR 121.

Table 5-1: Exceptions to Boldface and Underline Design Standards

No.	Design Exception and HDM Index	Location(s)	Standard	Existing	Proposed
B-1	**Stopping Sight Distance Index 201.1 and Table 201.1**	Various locations from 213+50 to 667+89	580 ft (60 mph) east of SR 121 intersection	Varies (384 ft [47 mph] to 660 ft [65 mph])	Varies (432 ft [50 mph] to 550 ft [58 mph])
B-2	**Traveled Way Width Index 301.1**	205+72 to 678+47	12 ft	12 ft	11 ft
B-3	**Shoulder Widths Index 302.1 and Table 302.1**	Rt shoulders EB and WB–313+00 to 334+80	8 ft	8 ft	4 ft
		Lt shoulders EB and WB – Various locations from 165+00 to 698+00	5 ft	4 ft	Varies from 1 to 5 ft
B-4	**Minimum Median Width Index 305.1(2)**	Various locations from 165+00 to 679+35	12 ft	10 ft	Varies from 4 to 12 ft
B-5	**Minimum Horizontal Clearance Index 309.1(3)**	Rt Shoulders EB and WB - 313+00 to 334+80	8 ft	8 ft	Varies from 4 to 8 ft
		Lt Shoulders EB and WB – 165+00 to 698+00	5 ft	4 ft adjacent to median barrier	Varies 1 to 5 ft.
B-6	**Superelevation Index 202.2**	Various Locations from 213+50 to 667+89	Varies RC to 9%	Varies NC to 7%	Varies NC** to 7%
C-1	Minimum Grade Index 204.3	Various locations from 213+00 to 697+00	Minimum 0.3%	0.3% or less	Maintain existing
C-2	Side Slope Standards for Fill Index 304.1	Various locations from 155+30 to 695+00	4:1 or flatter	Varies from 1.5:1 to 6:1	1:1 to 2:1
C-3	Single Lane Freeway Entrance, Inlet Nose Angle Index 504.2 (2) and Figure 504.2A	Walnut Avenue WB on-ramp at Mare Island Interchange	4°20'14"	9°47'52"	13°30'16"
C-4	Single Lane Freeway Entrance, Acceleration Lane Length Index 504.2 (2) and Figure 504.2A	Walnut Ave WB on-ramp at Mare Island Interchange	467.11 ft	228 ft	228 ft

Notes:
EB = eastbound
HOV = High-Occupancy Vehicle
RC = Remove Adverse Crown
PM = post mile
WB = westbound
NC = Normal Crown

Coordination Efforts

A kickoff meeting was held on September 20, 2019, with Caltrans District 4 and Headquarters Design to discuss the proposed geometry for the Project. The initial comments were incorporated into the Project preliminary design.

Two other focused geometry meetings were held with Caltrans Headquarters Design and District 4 on and March 12, 2020, and November 11, 2020. The comments received were reviewed and incorporated.

Based on further discussions with District 4 and Headquarters Design, Alternative 3B was added. This alternative provides 8-foot wide outside shoulders.

During the course of the DEIR/EA circulation, the design team evaluated ways to refine Alterative 3B. The CHP stated its preference for an 8-foot outside shoulder to the extent possible to avoid the loss of disabled vehicle refuge and to provide HOV enforcement and maintenance access. The CHP stated that it would accept not having the Sonoma Creek Bridge widened. Based on discussions with the District and the CHP, it was requested that the designers evaluate widening the bridge deck to the extent possible to provide a 4-foot shoulder. The designers coordinated with the Caltrans Structure Liaison Engineer and developed an acceptable concept that would widen the bridge without providing additional supports or bent work. This concept would reduce environmental impacts. The District indicated that this approach was acceptable and an Advance Planning Study was developed and is currently under review for approval. With the former design, piers would have been driven with impact hammering, which has consequences to the fishery habitat identified and evaluated in the DEIR/EA. With the proposed modifications, no piers will be needed in or at Sonoma Creek. Other elements to be further evaluated as part of this widening include a speed reduction across the bridge and providing TOS elements for pedestrians and bicyclists during the Design phase.

High-Occupancy Vehicle (Bus and Carpool) Lanes

The Project proposes HOV Lanes in each direction to encourage a mode shift from SOVs to HOVs to reduce traffic demand and decrease corridor congestion while increasing person throughput.

There will be an HOV Lane in each direction on the left side (adjacent to the median) in addition to the new General Purpose Lane that will be a tolled lane. The HOV lane use will be designated as 24 hours, 7 days a week (full time HOV lane).

Ramp Metering

There is currently no ramp metering at the Mare Island interchange entrance ramps.

Installation of ramp-metering equipment is proposed along the WB on-ramp from Walnut Avenue at the Mare Island interchange. Implementation of ramp metering will be performed at a later date, when it can be implemented for the entire corridor.

Park and Ride Facilities

There are no Park and Ride facilities within the project limits. Park and Ride facilities are not proposed for the project.

Highway Planting

Removal of existing vegetation will be required for outside roadway widening in areas where clearances must be maintained and where bridge abutment work is proposed. Potentially affected vegetation was categorized in the Draft Environmental Document; the vegetation included landscaped (planted or maintained), ruderal (typically colonizes disturbed lands), and natural (representative of natural conditions) vegetation. The quantity of vegetation removed will ultimately be determined during final project design and will serve as the basis for determining the amount of replacement landscape planting required for the Project. After construction, vegetation will be replaced where adequate setback occurs within the right of way and where planting is feasible per Caltrans policies.

The project cost estimate provides $1.3 million for highway planting. This cost is to replace planted or maintained areas impacted by the construction of the Project.

Erosion Control

The following standard practices will be part of the Project for erosion control and construction discharges:

- As part of construction, no debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products, or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the United States (US) or drainages. No discharges of excessively turbid water will be allowed, and all equipment will be well maintained and free of leaks.

- A Water Pollution Control Program (WPCP) and erosion control Best Management Practices (BMPs) will be developed and implemented to minimize wind or water-related material discharges, in compliance with the requirements of the San Francisco Bay RWQCB and the 2018 Caltrans Standard Specifications, Section 13-2. The WPCP will provide water pollution control practices to limit stormwater and non-stormwater discharges; temporary construction BMPs will be used to the maximum extent necessary.

- Erosion control methods may include silt fencing, straw wattles, straw bales, coir blankets, sediment traps, and other protective methods to limit the potential for erosion of sediment beyond the work area.

- Trash capture measures will be included where there are identified areas of trash generation or accumulation. Moderate areas of trash generation have been identified at the ramps east and west of the Mare Island / Napa River Bridge.

The Project will be required to implement treatment BMPs because the proposed improvements result in the creation or replacement of more than 1 acre of impervious area.

Once grading or soil disturbance work is completed, erosion control measures will be applied to exposed areas as a permanent measure to achieve final slope stabilization. These permanent measures may include hydraulically applying a combination of hydroseed with native seed mix, hydro-mulch, straw, tackifier, and compost to promote vegetation establishment and installing fiber rolls to prevent sheet flow from concentrating and causing gullies. For steeper slopes or areas that may be difficult for vegetation to establish, measures such as netting, blankets, or slope paving could be considered to provide stabilization. The Project will consider bioretention swales and biofiltration strips within the Caltrans right of way.

Given that the project area has shallow groundwater, other conventional treatment measures that capture and treat stormwater runoff may need to be considered; these devices could include basins or media filters. Due to the presence of environmentally sensitive areas and the limited available treatment area for BMPs, the Project may need to consider off-site stormwater treatment options. Off-site stormwater treatment will be implemented since a deficit of approximately 25 to 40 acres requires off-site treatment. On-site BMPs may address some portion of this deficit in the final design, and preliminary discussions with the City of Vallejo and the City of Sonoma have identified potential off-site mitigation projects. The final drainage design, selection of treatment BMP types and locations, and determination of impervious area treated will be refined during the final design. Permanent project features will include measures to address permanent erosion control, drainage facilities, and on-site treatment.

A detailed evaluation of project erosion control measures will be conducted during the Plans, Specifications, and Estimate (PS&E) phase of the Project in conjunction with design of stormwater control measures, using Caltrans guidelines for BMPs. Erosion control measures are further explained in detail in the Project's Stormwater Data Report (SWDR). The Project's SWDR without the Attachments is provided as Attachment D. Erosion control measures will be defined for the Project and included in the Storm Water Pollution Prevention Plan (SWPPP) during the final design phase, as required by the National Pollutant Discharge Elimination System (NPDES) permit.

The estimated costs for the erosion control measures for each Build Alternative are provided in the Project Cost Estimate (Attachment E).

Noise Barriers

The Noise Study Report prepared for the Project documented the assessment of existing and future (2045) traffic noise levels at noise-sensitive receptors in the vicinity of the Project and identified whether additional noise abatement measures will be necessary for the Project to comply with State and federal noise abatement/mitigation requirements.

A preliminary noise abatement analysis was conducted that identified the feasibility of constructing or replacing noise barriers to reduce traffic noise levels. None of the sound walls

evaluated meets both the feasibility and reasonableness criteria; however, the final decision on the noise abatement will be made on completion of the project design and the public involvement process. The Noise Abatement Decision Report is discussed in Section 6H.

Nonmotorized and Pedestrian Features

There are no pedestrian facilities on SR 37 within the project limits. Bicyclists are permitted on the shoulders of SR 37. A striped Class II bike lane exists in the EB direction of SR 37 at the Cullinan Ranch Restoration area driveway intersection that runs the lengths of the acceleration and deceleration lanes (total length = 1,400 feet).

See the "Complete Streets" discussion, below, for a further discussion of pedestrian and bicycle facilities.

Needed Structure Rehabilitation and Upgrading

Bridge widening will be required at Tolay Creek Bridge and at Sonoma Creek Bridge. An Advance Planning Study was prepared for these bridges under the various Build Alternatives. An Advance Planning Study Design Supplement for Sonoma Creek Bridge was prepared for the design refinements associated with the Sonoma Creek Bridge widening. See Attachment F for the Advance Planning Studies and Design Supplement.

The Sonoma Creek Bridge Inspection Report recommended repair (remove and replace) the polyester overlay in the eastbound lane of Span 6 where there is spalling with exposed rebar and sealing the a 1-foot long transverse crack in the polyester overlay in the eastbound lane of Span 10 for the deck at. It also recommended repairing the surface of the reinforced concrete slab at Abutment 1 that has delamination and spalls along the base of the bridge rail in the outside/right shoulder.

Recommended repair for Tolay Creek Br in 2020 was to upgrade bridge railings to standard.

Needed Pavement Rehabilitation

Field observations and Caltrans' Automated Pavement Condition Survey data indicate the need for a maintenance level resurfacing in the corridor at this time, with a pavement rehabilitation needed within the next 7 years. The Caltrans Maintenance Program for Fiscal Year 2022/23 under District 4 HM1-122 has programmed pavement rehabilitation of 0.15' Cold Plane and RHMA in Solano County between PM 0.0 to R7.4 under EA 04-0Y190. Caltrans is investigating other opportunities within the SHOPP to fund the needed rehabilitation. Such rehabilitation would be in addition to the regular field maintenance repairs done by State forces. The following projects are listed in the 10-Year SHOPP Plan:

- **EA 4Q840, Son - 37- PM 3.5/R6.245** – Pavement Rehabilitation Project
- **EA 1Q400, Sol – 37 - PM 0.0/7.4** – Pavement Rehabilitation Project

5B. Rejected Alternatives

The following alternatives were developed during the course of study and identified by the PDT or identified through stakeholder interaction. These alternatives were evaluated and have been rejected. Brief descriptions of the alternatives and the reasons why they were rejected are provided below.

PSR-PDS Alternatives

Four-Lane Standard Section

This alternative proposed to widen the current two-lane SR 37 to a standard four-lane facility at the existing elevation. The proposed addition of one lane in each direction would provide sufficient capacity to prevent the existing bottlenecks within the Project limits from developing and relieve the traffic congestion experienced in this corridor. Per Caltrans conventional highway standards, the proposed lane configuration would include two 12-foot lanes, a 5-foot left shoulder, and an 8-foot right shoulder. This alternative proposes to widen the existing 50-foot roadway section to a 76-foot section, thereby significantly impacting environmentally sensitive areas along the existing corridor. This alternative also proposed to widen both the Sonoma Creek and Tolay Creek Bridges. The significant area of environmental disturbance would mean longer approval periods with involvement from various regulatory agencies.

This alternative was not considered further for the following reasons:

- The four-lane standard section would have one of the highest environmental impacts and the widening costs would be among the highest of all the alternatives considered to achieve 12-foot wide lanes and wider inside shoulders (adjacent to the median). The total roadway width would be 76 feet, compared to next widest alternative (Alternative 3B at 68 feet wide).

- The widening requirement could be avoided by Alternatives 3A or 3B, which also achieve two-through full time lanes in each direction with less environmental impact.

Fixed Barrier and Three-Lane Reversible Lane Section

This alternative proposed a fixed barrier and a separated reversible lane section consisting of a 12-foot reversible lane for peak directional traffic, 2-foot left shoulders, two fixed permanent barriers on each side of the reversible lane, and 8-foot right shoulders for the General Purpose Lanes and reversible lane. It also proposed significant widening into environmentally sensitive areas along the existing corridor. In addition to the widening cost, this alternative would have ongoing operational and maintenance costs for the reversible lane operations. Given the 2-foot width of each of the two fixed permanent barriers, the roadway footprint for this alternative is 76 feet wide, which is greater than Alternative 3B's 68-foot wide footprint. Thus, Alternative 3B would provide a four-lane facility with 8-foot outside shoulders, simpler geometry and maintenance, and better highway operations than this alternative.

This alternative was not carried forward past the PSR-PDS for the following reasons:

- The solid barriers would require at least one wide (8-foot) shoulder to allow for emergency vehicles and for disabled vehicles to pull out of the traveled lane. This requirement would increase the overall width of the highway.

- Reversing the center lane would require a commitment to substantial operation and maintenance costs, similar to Alternative 1. These costs would include a dedicated operation and maintenance crew to operate the reversible lane, with redundancy of crew and equipment to ensure at least twice daily operation of the lane.

- Each end of the barrier where vehicles enter or exit would require movable gates to allow closure of the lane. A maintenance crew and possibly a patrol vehicle would have to check that the lane is cleared of all vehicles before the lane could be opened in the reverse direction.

- The lane has the potential for driver confusion because lane operation reverses at least twice a day. There would be the potential for an inattentive or confused driver to mistakenly attempt to enter the lane from the wrong direction.

This alternative was not further advanced because it did not offer any advantages beyond those of the other alternatives considered. It would mandate a commitment to a high operation and maintenance presence over the lifetime of the project. The creation of a barrier-separated lane in the center of SR 37 would also have a high adverse visual impact.

PA&ED Phase Alternatives

Alternatives 1, 2, and 3A were developed and evaluated with the specific intent to minimize harm to wetlands and protected habitat, to reduce the need for off-setting mitigation, and to reduce project costs. Alternative 1 would employ a movable barrier to alternate the directional flow of the center lane of the highway, using the pavement space to emphasize use for the peak direction of travel as it switches in direction twice a day. Alternative 2 was conceived to consider using the shoulders as travel lanes during the peak periods, and then revert the paved space back to shoulders during the non-peak periods. Alternative 3A was designed to reduce the shoulders to a width of 4 feet wide (the shoulders are currently 8 feet wide on SR 37, which is a design standard). Although these alternatives provided reduced impact to wetlands and habitat alongside SR 37, after careful consideration by the PDT and after receiving public and agency input, the PDT ultimately decided to eliminate them from further consideration for the reasons explained in the following sections.

Alternative 1: Three-Lane Contra-Flow with Movable Median Barrier and HOV Lane

Alternative 1 proposes to convert the existing two-lane highway to a three-lane highway with an MMB separating the two directions of traffic. The MMB would provide for two lanes during the peak period in the peak direction and a single lane in the non-peak direction. The additional lane would be an HOV lane to provide an incentive for mode shift from SOVs.

This alternative included the following features:

- From just east of SR 121 and the Sonoma SMART at-grade crossing to Noble Road, SR 37 would be widened to create a four-lane facility. This section would have 4- to 6-foot outside shoulders with approximately 1.4 miles of fixed median barrier to separate EB and WB traffic. The existing median barrier would be replaced with a new barrier constructed to current standards.

- The HOV Lane would be on the left side of the highway (adjacent to the median) and open only during the peak period in the peak flow direction. In the EB direction the HOV lane would begin east of the SR 121 intersection. The WB HOV lane would begin west of the Mare Island on-ramp.

- From Noble Road to approximately 0.3 mile west of the Walnut Avenue Overcrossing, approximately 7.6 miles of MMB would replace the existing median concrete barrier. This section would consist of three 12-foot wide lanes directionally divided by the MMB, with no inside shoulder and 8-foot wide outside shoulders, except at Sonoma Creek Bridge. When there are two lanes open in one direction during the peak period, the movable inside lane would be an HOV lane.

- Storage of the barrier transfer machine is anticipated to be in two locations: In the median immediately west of Noble Road and approximately 0.3 mile west of the Walnut Avenue overcrossing structure.

- The median barrier would be moved at least twice per day to accommodate typical peak period directional flow traffic; the transfer to change direction of the center lane would take approximately 2 hours to complete.

- Approximately 4 feet of widening would be done along the corridor, for a total roadway width of approximately 54 feet.

- Both sides of Tolay Creek Bridge would be widened.

- Sonoma Creek Bridge would be widened on the WB side by about 4 to 5 feet unless a design exception is approved. If Sonoma Creek Bridge is not widened, the bridge section would consist of three 12-foot wide lanes directionally divided by the movable barrier with no inside shoulder, a 4-foot outside shoulder on the one side, and 8-foot wide outside shoulders on the other side.

- The SR 37 / Noble Road intersection would be signalized.

Under this alternative, the MMB would require twice daily transfer, which would require a dedicated work crew and equipment. Multiple barrier transfer machines and redundancy of crew would be needed to ensure the ability to move the barrier 7 days a week or during special events or changes in traffic flow. In addition, maintenance of the barrier and storage of the equipment would be on-site, requiring a maintenance shed at each end for storage of machines and equipment. These requirements would introduce new, relatively high operational costs, and require storage building(s) for the equipment and a structure for crew quarters, which have not been defined or designed but would likely be located along the

SR 37 corridor near Noble Road. The existing subsidence of the roadway could affect the operation of the barrier. Although the Project would be designed to account for this settlement, subsidence and settlement may cause the SR 37 pavement to be unsmooth, which would affect the way that the MMB would function over time. If this alternative had been identified as the Preferred Alternative, additional studies would have been required to define the detailed needs of the maintenance operations.

Alternative 1 was not carried forward because of its limited ability to meet the purpose and need of the Project by providing an HOV lane only in the peak period direction and the obligation to operate and maintain the movable barrier for the duration of the Project's lifespan.

This alternative partially met the Project's purpose and need. However, the traffic benefits would be limited to the peak period in one direction only, and would provide no traffic benefits in the non-peak direction of travel with respect to congestion reduction, improvement in travel time, or reduction of queuing. Comparing the peak period travel times shows a substantial reduction in delays achieved by Preferred Alternative 3B, Scenario 3, compared to Alternative 1, Movable Barrier:

- P.M. Peak: In 2045, maximum eastbound travel time for Alternative 1 would be approximately 156 minutes for SOVs and 149 minutes for HOVs. These times contrast with the 67 minutes for SOVs and 54 minutes for HOVs under Preferred Alternative 3B, Scenario 3. Comparison of the peak hours shows Alternative 1 would continue to have queuing that backs up to the SR 37 westbound ramps and Walnut Avenue / Main Gate, with LOS F conditions for all hours between 5 a.m. and 10 a.m. Alternative 3B will reduce the queuing and provide an LOS of C or better for all hours except between 6 a.m. and 8 a.m.

- A.M. Peak: In 2045, the maximum westbound travel time for Alternative 1 would be 137 minutes for SOVs and 97 minutes for HOVs. These times contrast with the 101 minutes for SOVs and 97 minutes for HOVs under Preferred Alternative 3B, Scenario 3. Peak hour delays at the intersections will be substantially lower with Alternative 3B than with Alternative 1 at all intersections studied (Lakeville Highway, SR 121, Noble Road, Skaggs Island Road, and the Walnut Avenue ramps).

Alternative 1, by having a single lane in the non-peak direction, reduces the ability of the highway to accommodate changes in travel patterns associated with special events such as fluctuations in travel on holidays or Sonoma Raceway events, when travel demand may be in both directions. Alternative 3B, with two lanes in each direction, would provide more accommodation of changes and growth in traffic in both directions.

Input received during the review period for the DEIR/EA was an important factor in dropping Alternative 1 from further consideration. CHP provided input that the movable barrier would introduce an unwanted risk to Caltrans personnel and contractors and to emergency response times during transfer operations. CHP and local landowners emphasized the need for openings in the median barrier at Skaggs Island Road and Noble Road to allow for access and left turns. It would be critical to the CHP and emergency responders to be able

to make U-turns at these midway locations and allow for quicker response times. Alternative 1 would require travel to each end of the continuous movable barrier before being able to reverse directions to respond to an emergency or enforcement event in the opposite direction of travel. Segmenting the movable barrier could be achieved (providing gaps or openings at the local roads), but it would complicate the barrier transfer machine when crossing these openings through local intersection cross-traffic and reconnecting to the next barrier segment to continue the barrier transfer operation.

Caltrans maintenance was not supportive of Alternative 1, Movable Barrier. The barrier would require maintaining an operational and maintenance crew daily to move the barrier at least twice per day. This requirement represented a commitment over the lifespan of the Project that would involve funding for personnel and capital costs. As noted in the DEIR/EA, this funding would have to cover the operational crew, housing the crew at or very near the project location, hiring and training, and providing for storage of equipment at the corridor. The environmental sensitivity of the corridor area (much of it within protected habitat and a designated wildlife refuge) restricts the availability of areas where additional structures would be located.

Alternative 2: Convert Existing Outside Shoulders to HOV Lane During Peak Periods (Part-Time Use Lane)

This alternative proposes to use the highway outside shoulders to provide a traffic lane during the peak hours in the peak direction. During the peak hours in the peak direction, the outside shoulder would act as an HOV Lane for users, and in the non-peak direction it would revert to a shoulder. The outside lane would be for HOV use during peak periods to provide an incentive for mode shift from SOVs. Static signs are proposed to manage the part-time lanes. This alternative would include the following:

- Two 11-foot wide inside lanes separated by a fixed median barrier with a 2-foot inside shoulder (6-foot wide median) and two 12-foot wide outside lanes and a 4-foot outside shoulder, for a total roadway minimum width of 60 feet.

- During the peak period there would be two lanes in each direction, and the inside lane would be for General Purpose use only. The outside lane would be for HOV use during peak periods only, extending from east of SR 121 to the Walnut Avenue. overcrossing. The a.m. peak period would be 5 a.m. to 11 a.m., and the p.m. peak period would be 2 p.m. to 9 p.m. During the non-peak period, there would be only one lane in each direction, which would be a General Purpose Lane (open to all vehicles), and the outside lane would revert to a shoulder, creating a 16-foot shoulder.

- The EB HOV Lane would begin east of the SR 121 intersection. The WB HOV lane would begin west of the Mare Island on-ramp.

- Approximately 9.09 miles of existing outside shoulder would be reconstructed and converted to a travel lane pavement section in each direction.

- The existing 32-inch high concrete median barrier would be replaced with a new standard 36-inch high concrete barrier for approximately 9.3 miles.
- Approximately 9.1 miles of Type 85 or MGS would be placed at the edge of the outside shoulder in each direction (total 18.2 miles).
- Vehicle pullout areas would be provided at periodic intervals.
- Both sides of the Tolay Creek Bridge would be widened.
- The SR 37 / Noble Road intersection would be signalized.

The existing Sonoma Creek Bridge can accommodate the proposed lane configuration, except for the 4-foot outside shoulder. The proposed outside shoulder width along Sonoma Creek Bridge would be 0 feet and the inside shoulder would be 1 foot wide.

Alternative 2 cannot accommodate pedestrians and bicyclists along the corridor. Legislation to prohibit bicycle and pedestrian usage along this corridor would be proposed.

Alternative 2 was not carried forward because of its limited ability to meet the purpose and need of the project by providing an additional lane only in the peak period direction and only during the peak period. In addition, this alternative was identified as introducing unwanted potential driver confusion and misuse of the extra wide shoulders during non-peak periods, a lack of shoulder space during peak travel periods for the safety of emergency and enforcement responders, and lack of bicycle and pedestrian access.

This alternative partially meets the purpose and need of the project. During the peak period, the shoulder would be available as an HOV Lane during its hours of operation, but the shoulder would not be available during non-peak periods, and it would not be available in the non-peak direction of travel. Although this alternative would help alleviate congestion during the peak period, it would only provide this benefit in one direction of travel. This design and operation would require a substantial investment in widening the highway, but would not maximize the use of the widened highway.

The shoulders would appear unusually wide during non-peak periods and in the non-peak direction of travel. Instead of typical 8-foot wide shoulders, they would be 12 feet wide with signs identifying their use as restricted during non-peak periods. Drivers would have to be aware or familiar with the restriction of hours of use during non-peak periods to avoid a violation, and the potential for frequent violations along the corridor would likely increase law enforcement efforts. This design was therefore seen as having the potential for driver confusion, and increased misuse by drivers using the wide shoulders as a passing lane on the right side to get around slower vehicles.

The closure of the shoulders to bicyclists and pedestrians would be necessary (for safety of the bicyclists and pedestrians) during peak periods when the shoulders are only 4 feet wide, which was determined to be not acceptable. Having the shoulders closed during peak periods, but open during non-peak periods, was also determined not practicable or safe because it

might prevent bicyclists from making a necessary return trip if the shoulder is closed at the time they attempt to return.

Alternative 3A: Widen to Four Full-Time Lanes, with 4-Foot Shoulders, No Widening at Sonoma Creek Bridge, Begin Eastbound HOV Lane on the Left Side West of SR 121

This alternative would widen the highway to provide four full-time lanes, two in each direction. The inside lane (left-side lane) would be for HOV use during peak periods to incentivize a mode shift from SOVs in both directions. Static signs are proposed to manage the lanes. This alternative would include the following:

- Two 11-foot wide inside lanes separated by a median barrier with a 2-foot inside shoulder (6-foot wide median) and two 12-foot wide outside lanes with a 4-foot outside shoulder, for a total roadway minimum width of 60 feet.
- There would be two lanes in each direction during all hours; however, during the peak period, the inside lane (left-side lane) in each direction would be restricted to HOV use.
- The EB HOV lane would begin approximately 0.6 mile west of the SR 121 intersection, and the EB left-turn lanes would be extended by approximately 0.5 mile to the west. The WB lane would begin immediately west of the Mare Island interchange on-ramp.
- To accommodate merging, two General Purpose Lanes and one HOV Lane in the EB direction would continue east of the SR 121 intersection. Then, one General Purpose Lane would drop and merge approximately 0.3 mile east of this intersection.
- The EB direction west of SR 121 would be widened for approximately 0.8 mile to accommodate the EB HOV Lane and extend the left-turn lane to the west.
- Approximately 9.1 miles of existing outside shoulder would be reconstructed and converted to a travel lane pavement section and smaller shoulder in each direction. A Type 85 or MGS would be placed at the edge of the outside shoulder in each direction.
- The existing 32-inch high (Type 50) concrete median barrier would be replaced with a new standard 36-inch high (Type 60MS) concrete barrier between the SR 121 intersection and the Mare Island interchange for approximately 9.2 miles.
- Approximately 9.1 miles of Type 85 or MGS would be placed at the edge of the outside shoulder in each direction (total 18.2 miles).
- Approximately 25 vehicle pullouts would be constructed.
- Both sides of the Tolay Creek Bridge would be widened.

- The SR 37 / Noble Road intersection would be signalized.

The existing Sonoma Creek Bridge can accommodate the proposed lane configuration, except for the 4-foot outside shoulder. The proposed outside shoulder along Sonoma Creek Bridge would be 0 feet and the inside shoulder would be 1 foot wide.

Alternative 3A cannot accommodate pedestrians and bicyclists along the corridor. Legislation to prohibit bicycle and pedestrian usage along this corridor would be proposed.

Alternative 3A was not carried forward for safety reasons. The proposed 4-foot wide shoulders along the majority of the route, with minimal to no shoulders on the Sonoma Creek Bridge, was determined unacceptable for safety of motorists needing emergency use of the shoulders, inability for the CHP to conduct HOV enforcement and insufficient space for maintenance access. Caltrans also received comments from CHP about the safety of motorists and the safety of enforcement and emergency response providers. The PDT considered the use of pullouts, where periodic areas of paved shoulder up to 8 feet wide would be provided, but this was dropped from consideration because the pullouts would not provide the same level of safety as the continuous 8-foot shoulder proposed for the Build Alternative.

Similar to Alternative 2, the necessary closure of the shoulders to bicyclists and pedestrians for Alternative 3A was determined to be not acceptable, based on feedback from public and agency review comments.

Eastbound HOV Commencement Scenarios

The two EB HOV Lane scenarios and the SR 121 / SR 37 intersection improvements described below were rejected.

- Scenario 1 introduces the HOV Lane on the right side approximately 0.6 mile west of SR 121. This scenario was not selected as the preferred option because of the unconventional nature of the HOV Lane location and the potential for driver confusion. The EB direction would be widened to accommodate two left-turn lanes, two General Purpose Lanes, and one HOV Lane with an 8-foot wide outside shoulder. The left-turn lanes would be approximately 350 feet long. The WB lane configuration would be maintained with two General Purpose Lanes west of the intersection. East of the intersection, the WB approach consists of two General Purpose Lanes and one left-turn lane. The WB off-ramp to northbound SR 121 diverges from the outer lane just west of the railroad crossing. Southbound SR 121 would be widened to include a through lane to access Tolay Creek Road on the opposite side of SR 37.

- Scenario 2 introduces the HOV Lane on the left side east of SR 121, in the vicinity of the Tolay Creek Bridge. This scenario was not selected as the preferred option because it provided the least traffic operational benefits with regard to travel time compared to Scenarios 1 and 3.

6. CONSIDERATIONS REQUIRING DISCUSSION

6A. Hazardous Waste

AECOM prepared an Initial Site Assessment for the Project; the assessment was approved on August 19, 2020.

Construction of the Project could result in the potential disturbance of hazardous materials in the soil and groundwater. If contamination within the Project area is present, ground-disturbing activities during construction, such as drilling, excavation, grading, and trenching, could potentially expose construction workers and the public to hazardous conditions. Grading activities could also result in accidental mobilization of contaminants from the soil to groundwater or air. As described in the Initial Site Assessment, there is a potential for naturally occurring arsenic, naturally occurring asbestos, asbestos-containing materials, aerially deposited lead (ADL), lead-based paint, and treated wood waste to be encountered during soil excavation activities.

A review of regulatory databases GeoTracker and EnviroStor identified sites that were investigated for chemical releases; 17 of the 19 sites have been addressed to the satisfaction of the applicable regulatory authority. Thus, the majority of these sites are unlikely to result in impacts during construction and maintenance activities for the proposed project. However, hazardous materials at the former Tubbs Island Gunnery Range have the potential to have impacts.

ADL from the historical use of leaded gasoline exists along roadways throughout California. There is the likely presence of soils with elevated concentrations of lead as a result of ADL on the State Highway System right of way within the limits of the Project alternatives. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed under the July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control. This ADL Agreement allows such soils to be safely reused within the project limits as long as all requirements of the ADL Agreement are met.

A Preliminary Site Investigation (PSI) for ADL, agricultural chemicals, and unexploded ordnance is recommended during the Project design phase. A PSI will be performed in accordance with current Caltrans guidance to investigate hazardous materials concerns related to soil, groundwater, and building materials within the Project limits. Caltrans will prepare a work plan for the PSI. The findings of the PSI will be used to evaluate soil and groundwater handling practices, construction worker health and safety concerns, and soil and groundwater reuse and disposal options. If hazardous materials are identified during the PSI, additional investigation would be required to their full evaluation. All environmental investigations for the project will be provided to project contractors so the findings can be incorporated into their Health and Safety and Hazard Communication Programs.

Soil and/or groundwater found to have environmental contaminants should be properly characterized and disposed of at an appropriate facility per applicable regulations. A Soil and Groundwater Management Plan would be prepared to properly manage any impacted soil or groundwater discovered during ground-disturbing activities within the project limits.

Bridge surveys for contaminated materials will be conducted for the Tolay Creek and Sonoma Creek Bridges. Hazardous Structure Material Surveys would be conducted for asbestos-containing material, lead-based paint, treated-wood waste, and polychlorinated biphenyls (PCBs).

A Health and Safety Management Plan would be prepared to outline procedures if unexploded ordinance (UXO), mustard gas, or similar military hazards are encountered within the project limits.

6B. Value Analysis

The PDT agreed to conduct a Value Analysis (VA) immediately after Project Approval during the design phase for the selected build alternative and will take place in February 2023. The basis of the decision was to avoid conducting a VA on four build alternatives. .

6C. Energy and Resource Conservation

Energy

An Energy Technical Report was prepared and approved by Caltrans in November 2021 based on the guidance outlined in the Caltrans Standard Environmental Reference, Volume 1, Chapter 13, Energy (Caltrans 2021). Both direct and indirect energy usage were considered in this analysis.

Energy Use Related to VMT

Energy use factors were calculated as a statistical average to estimate fuel consumption in gallons per mile. To calculate and project the vehicle fuel used by the Project, the total VMT (in miles per day) for typical on-road vehicles and the total amount of vehicle fuel (in gallons per day) used in the Bay Area region were obtained from the CARB EMFAC2017 model. The results from the model were calculated for the Base Year, 2025 Opening Year, and the 2045 Design Year for both gasoline and diesel fuel types. Average gallons per mile were then calculated for each year and each fuel type. Though the projected VMT increases over time, the total gallons consumed per day decrease, which is associated with better energy efficiency and standards that apply as older vehicles are replaced over time by increasingly more fuel-efficient cars and trucks. The change in total daily fuel consumption was estimated to reduce between the 2020 base year by 8.6% in 2025 for all Build Alternatives and by 15.5% in 2045 for all Build Alternatives (compared to the 2020 base year).

Higher speeds correlate to better fuel economy and stop-and-go traffic conditions lead to increased fuel consumption. Fuel efficiency for midsize conventional gasoline- and diesel-powered vehicles tends to peak between 35 and 55 mph, after which efficiency steadily declines (US Department of Energy 2020). VHD are anticipated to increase over time, regardless of the chosen alternative. However, the Build Alternative is anticipated to reduce VHD relative to the No-Build Alternative. Alternative 3B is anticipated to reduce daily VHD by 3,187 and 15,936 in 2025 and 2045 respectively when compared with the No-Build Alternative. Therefore, the Build Alternative would reduce the potential for wasteful energy use as a consequence of stop-and-go traffic conditions.

Energy Use for Construction

Project construction would be a temporary commitment of energy needed for any infrastructure improvement project. Energy consumption during construction would be conserved and minimized to the maximum extent feasible. Energy use for construction was calculated based on Project-specific information. The air quality study was used to derive short-term construction emissions as a representative basis for construction fuel consumption and converted to energy use expressed in British thermal units (BTU). Energy consumption for construction was estimated at 80 billion BTU, which would be a one-time consumption of energy. This estimate accounted for all factors of construction, including materials, transportation, equipment use, and disposal of materials. Because the energy is necessary for project construction to achieve the Project's purpose and need for more efficient traffic on SR 37, this energy usage is not considered a wasteful or inefficient expenditure of resources.

Resource Conservation

The Project will improve traffic operations and facilitate traffic movements through the Project area. The lessening of congestion and related traffic delay is associated with faster average travel speeds and more efficient vehicle operation compared to No-Build conditions. Improved operations are likely to reduce vehicle energy use, whether in the form of petroleum fuels or alternative sources of energy. Measures to conserve energy and nonrenewable resources have been considered. Any existing asphalt concrete pavement that is removed will be recycled if it is economically and logistically feasible. Additional features, such as barricades, signs, crash cushions, signals, Midwest Guardrail System, and lighting, will be salvaged and reused if they are in working condition, meet current standards, and if doing so proves economically and logistically advantageous. These features will be further analyzed during the PS&E phase.

6D. Right of Way

General

Temporary construction easements (TCEs) may be needed for the roadway work at SR 121, Tolay Creek Bridge, Noble Road, the Cullinan Ranch public access intersection, and other private access driveways to provide construction access. The duration of the TCEs is expected to be one construction season.

The Preferred Alternative will require permanent right of way acquisitions and temporary construction easements along properties abutting the proposed improvements on SR 37 (see Attachment G).

A Right of Way Data Sheet has been prepared for the Preferred Alternative based on the right of way needs identified in the conceptual design developed for the Preferred Alternative (see Attachment G).

Permanent right-of-way acquisition would be needed at the San Pablo Bay National Wildlife Refuge (Refuge), Napa-Sonoma Marshes Wildlife Area (NSMWA), and State-owned parcels, which are adjacent to a portion of the highway under Alternative 3B. This would

consist of acquisition of a portion of the NSMWA, State-owned and Refuge parcels on the southern side, between approximately across the Cullinan Ranch public access driveway (PM SOL 3.88) and slightly greater than 0.9 mile (5,000 feet) east of the Mare Island Overcrossing (PM SOL R6.20), for a total length of 2.3 miles (12,200 feet). Another partial right-of-way acquisition would be required on the southern side of SR 37, approximately 0.6 mile west of SR 121, for a length of 0.09 mile (500 feet). This parcel is understood to be part of the Refuge. Another partial right-of-way acquisition would be required on the northern side of SR 37, immediately east of the Sonoma Creek Bridge westbound viewing area, for a total length of slightly greater than 0.1 mile (700 feet). This parcel is understood to be managed by California Department of Fish and Wildlife (CDFW).

An allowance of approximately $28.3 million for acquisition of offsite mitigation is included in the right of way costs. The offsite mitigation is required for the Project's wetlands and waters and biological impacts. This cost assumes a 3:1 restoration/enhancement to impact ratio at approximately $1,025,000 per acre.

As part of the Project mitigation costs, approximately $38 million is included in the right of way costs for bus/transit and public access improvements. Of the $38 million, the Project will provide up to approximately $20 million for transit implementation. See Attachment N for additional discussion on how the project will support transit and prioritize rideshare along the corridor. Approximately $18 million is included for public access improvements, which may include constructing a bike path as part of the Bay Trail to meet BCDC's regulatory mandate to provide "maximum feasible access consistent with the proposed project" for development projects in their shoreline band jurisdiction. Details of the public access improvements will be determined during the design phase.

There are possible impacts to adjacent properties, the values and access rights, leading to potential eminent domain action. There are deed restrictions and reservations on some properties within the project limits that will require further investigation by the project team during the design phase.

Utility and Other Owner Involvement

The Project area contains overhead electric and communication lines. Utilities in the Project area were identified through site visits and reviews of utility plans obtained from Caltrans, utility providers, and local municipalities. Utility providers in the Project area are listed below by category:

- Cable: Comcast
- Electric: Pacific Gas and Electric Company (PG&E)
- Communications: AT&T

Utility relocations will be necessary where there is a conflict with the proposed improvements. Every effort will be made to minimize utility conflicts and relocations.

The PG&E 12-kilovolt (kV) distribution line is within the Caltrans right of way. A utility encroachment policy exception is not required for the relocation of the existing PG&E and AT&T overhead utility lines because SR 37 is a conventional highway, and these facilities are not high-priority utilities. Poles would be relocated as close as possible to the right of way to comply with the Project Development Procedures Manual, Chapter 17, and the Encroachment Permits Manual, Chapter 600.

Verification of utilities will be required. The need for positive location (potholing) as prescribed by the Policy on High and Low Risk Underground Facilities Within Highway Rights of Way (January 1997) will be ascertained during the final design phase once utility facilities have been plotted. Utility relocations are anticipated. Table 6-1 shows the anticipated utility relocations for the Project under the Preferred Alternative.

Table 6-1: Anticipated Utility Relocations Under the Preferred Alternative

Facility	Station Location	Length (feet)	Owner	State Obligation	Local Obligation	Utility Owner Obligation
a. Telecommunications	207+40 Lt	300	AT&T	$0	$50,000	$50,000
b. 12 kV OH Electrical Distribution (approx. 11 poles)	432+00 to 468+50 Rt	3,700	PG&E	$0	$450,000	$450,000

Notes:
approx. = approximately
kV = kilovolt(s)
OH = overhead
AT&T = AT&T Inc.
PG&E = Pacific Gas and Electric Company

Railroad Involvement

The SMART railroad (Northwestern Pacific Railroad) line crosses SR 37 at grade between Tolay Creek and the SR 121 intersection. It is an active railroad, and there are crossing signals and swing arm barriers that activate when a train is approaching. The crossing panels will need to be extended, and the crossing signals and arms will need to be relocated and reconstructed to accommodate the additional proposed lanes under all Build Alternatives.

6E. Environmental Compliance

Caltrans, as assigned by the FHWA, is the lead agency under NEPA. Caltrans is also the lead agency under CEQA.

A Final EIR/EA has been prepared in accordance with Caltrans environmental procedures and State and federal environmental regulations. The Final EIR/EA (see Attachment H) is the appropriate document for the Project and was approved on February 8, 2023.

Caltrans has identified the Preferred Alternative and under CEQA will approve and certify the EIR, and approve a Notice of Determination. Caltrans, as assigned by FHWA, has determined that the NEPA action does not significantly impact the environment, and Caltrans will issue a Finding of No Significant Impact.

Caltrans has initiated consultation with USFWS and the National Marine Fisheries Service (NMFS) on the Project and impacts under Section 7 of the Federal Endangered Species Act. Similarly, Caltrans has initiated consultation with the CDFW under the California Endangered Species Act. The PDT requested and received an extension from Headquarters Division of Environmental Analysis on April 11, 2022 to complete consultation and receive the Biological Opinion during Phase 1 PS&E. Consultation will therefore continue with these agencies in the PS&E phase. A wetland jurisdiction has been prepared. The Project's cultural resource studies were submitted to the State Historic Preservation Officer (SHPO). No comments were received, and Caltrans made the determination to move forward consistent with the provisions of the Section 106 Programmatic Agreement. Consultation has been completed with the Bay Area Interagency Air Quality Conformity Task Force, resulting in a determination that the Project is not a Project of Air Quality Concern. FHWA concurred with the project level air quality conformity determination and that the project conforms with the State Implementation Plan (SIP). Consultation and permit applications will be completed during final design for necessary authorizations from USACE, CDFW, San Francisco Bay RWQCB, and BCDC.

The following subsections summarize the required environmental findings and issues related to Project design and construction.

Wetlands

The jurisdictional delineation field surveys were conducted in September and December 2019 and March 2021. The delineation identified 75.17 acres of waters of the US and other waters and other waters of the US potentially under the jurisdiction of USACE within the Biological Study Area. Other aquatic features (such as riparian woodlands, stormwater drainages, and basins) that are potentially non-USACE jurisdictional, State waters only, were also identified during the wetlands surveys.

The Project is anticipated to have permanent impacts from placement of permanent fill for road widening, retaining walls, sheet piles, and rock slope protection and from the placement of MGS. Under Alternative 3B, the bridge widening work at Sonoma Creek will have additional permanent impacts to wetlands and waters and will permanently shade additional areas below the widened bridge. The primary permanent impact under all scenarios is associated with road widening; the alternatives with greater shoulder widths correlate directly to an increase in permanent impacts on wetlands and waters. Temporary impacts are associated with construction access, staging areas, and temporary dewatering activities with potential to temporarily impact wetlands and waters. Under Alternative 3B, there would be an increase in overwater shading due to the widening of the Tolay Creek Bridge and the Sonoma Creek Bridge. Preliminary estimates of permanent and temporary fill impacts for all alternatives and the shading impacts from Alternative 3B are shown in Table 6-2 and Table 6-3 respectively.

Table 6-2: Preliminary Estimated Permanent Impacts to Wetlands and Other Waters

Habitat Type	Permanent Fill (acres)	Shading (acres)
Tidal wetlands	7.33	0.52
Nontidal wetlands	0.44	0
Subtotal Wetlands	*7.77*	*0.52*
Tidal Other Waters	1.27	0.17
Nontidal Other Waters	0.01	0.01
Subtotal Other Waters	*1.28*	*0.18*
Total Wetlands and Other Waters	**9.05**	**0.70**

Note: All values were rounded up to the nearest 0.01 acre.

Table 6-3: Preliminary Estimated Temporary Impacts to Wetlands and Other Waters

Habitat Type	Permanent Fill (Acres)	Shading (Acres)
Tidal wetlands	7.28	0.87
Nontidal wetlands	0.97	0
Subtotal Wetlands	*8.25*	*0.87*
Tidal Other Waters	4.63	0.87
Nontidal Other Waters	0.20	0.02
Subtotal Other Waters	*4.83*	*0.89*
Total Wetlands and Other Waters	**13.08**	**1.76**

Note: All values were rounded up to the nearest 0.01 acre.

Temporary impacts to wetlands and waters of the US and State will be mitigated through implementation of the proposed avoidance and minimization measures, and no additional compensatory mitigation is anticipated for those impacts under all proposed alternatives.

The Preferred Alternative is anticipated to have unavoidable permanent impacts from fill in wetlands and waters of the US and State, as summarized in Table 6-2. Caltrans will pursue efforts to restore, enhance, and/or create new wetlands and waters on-site at Tolay Creek to partially offset permanent loss of waters from the project. To offset any remaining permanent loss and habitat degradation of wetlands and other waters in the project area, Caltrans will provide in-lieu fee-based compensation at a 3:1 restoration/enhancement to impact ratio, or at a ratio determined appropriate in coordination with regulatory agencies with jurisdiction. Compensation will be provided through a project-specific plan that would provide in-lieu funding to a nearby restoration program or restoration project that would create, restore, or enhance resources adversely affected by the project. Appropriate compensation will be

determined in coordination with state and federal environmental regulatory agencies with jurisdiction. The estimated mitigation costs for the Preferred Alternative is $28 million.

Caltrans will offset temporary impacts during construction to wetlands and other waters by restoring disturbed areas to pre-project conditions at a 1:1 ratio.

Floodplains

The Project's receiving waters are Tolay Creek, Sonoma Creek, Napa River, and San Pablo Bay. All creek crossings and surrounding water bodies in the Project vicinity drain into San Pablo Bay. The Project is within various Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps in Solano, Sonoma, and Napa Counties. As determined from FEMA Flood Insurance Rate Maps (FIRMs), most of the Project is in SFHA Zone AE. This zone represents the base floodplain with areas subject to flooding by the 100-year flood event, where base floodplain elevations are provided. In these areas, the 100-year flood elevation is approximately 10 to 11 feet NAVD88.

Portions of the project area adjacent to Tubbs Island (between Tolay Creek and Sonoma Creek) are in SFHA Zone VE. These are coastal areas subject to coastal high-hazard flooding and to inundation by the 1 percent annual chance flood event, with additional hazards due to storm-induced velocity wave action. In these Project areas, the 100-year flood elevation is approximately 11 to 12 feet NAVD88.

A small portion of the Project area just east of the Tolay Creek crossing is in a shaded Zone X area. Zone X represents areas of moderate flood hazard, usually depicted on FIRMs as between the limits of the base and 500-year floods.

The water surface elevations are tidally influenced by San Pablo Bay.

The Project does not change the overall land use within the Project watershed and is not anticipated to cause substantial impacts due to added impervious areas. Biological mitigation will be provided at the areas where natural and beneficial floodplain values are potentially impacted. If the SR 37 corridor was inundated by the base floodplain, alternative regional routes are available that would allow transit of vehicles from Solano, Sonoma, and Napa Counties.

The Project will follow the existing SR 37 roadway within the Project limits and will not create new access to developed or undeveloped land in the flood zone. Therefore, the Project will not support incompatible floodplain development.

No significant changes in the FEMA 100-year water surface elevation are expected as a result of the Project. The Project would not change the overall land use in the watershed basin and would not add substantial amounts of impervious area to the watershed. Although the Project would require different amounts of permanent fill to widen the highway, most improvements by the Project would re-work existing impervious areas. The proposed fill placed in the floodplain is relatively minor in the context of the greater floodplain area and is not anticipated to impede floodwaters, affect bay level floodplains, or substantially reduce the area available to convey floodwaters.

If a 100-year flood event occurs, floodwaters will cause the low-lying sections of SR 37 to close, which could affect travel, emergency vehicle, and evacuation access. However, the Project will not cause any changes to these existing flood events or the frequency of their occurrence. The following routes provide practicable detours around the project area in the case of traffic interruptions from potential flooding conditions:

- For WB traffic: SR 29 south to I-80, west to Richmond Parkway to I-580, west to Richmond Bridge to U.S.101
- For EB traffic: U.S.101 to I-580 east to Richmond Bridge to Richmond Parkway or I-80

There is the potential for temporary closures, but not a significant potential for long-term interruption or termination of SR 37 because these events would not occur often. Closures would require drivers to temporarily use the alternate routes identified.

Potential short-term adverse effects to the natural and beneficial floodplain values during the construction of the new bridge may include the following: (1) loss of vegetation during construction activity and (2) temporary disturbance of wildlife and aquatic habitat. Construction would not create a hazard to life during the service life of the highway, nor would it result in adverse effects to natural and beneficial floodplain values. Biological compensation would be provided as appropriate where natural and beneficial floodplain values are potentially impacted within the Project area.

None of the existing floodplain values in or adjacent to the Project would be altered, and the Project would not create a significant risk to property. Therefore, there would be a minimal effect.

Cultural Resources

Site records and previous studies were accessed for the Area of Potential Effects (APE) and within a 0.5-mile radius of the APE. The records search identified one prehistoric archaeological site and four historic-era resources mapped within or adjacent to the APE. The background search also found that almost the entire APE is mapped as moderately sensitive for submerged archaeology; however, small portions of the APE are mapped as having high or highest sensitivity for submerged archaeology. The cultural resources investigations included archaeological testing and Native American consultation. Features identified and reviewed within the APE included the Mare Island Naval Shipyard (California Historic Landmark and National Historic Landmark District), the Tubbs Island levee, a segment of the Northwestern Pacific Railroad, and a previously recorded archaeological site (that lacked evidence of its presence within the APE).

No historic properties would be affected, and the Project would have no adverse effect with standard measures. Section 4(f) of the Department of Transportation Act of 1966 provides protection for historic properties. No historic properties are present within the APE; therefore, there are no Section 4(f) historic sites affected by the proposed Project. Therefore, there would be no impact to cultural resources. The Mare Island Naval Shipyard would not be affected by Project construction or operation, as there are no contributing or non-

contributing resources, such as landscape features, archaeological features, buildings, or structures associated with the Mare Island Naval Shipyard adjacent to or within the APE. No avoidance, minimization, or mitigation measures are required.

Avoidance measures were defined to address the discovery of previously unknown resources during construction. It is Caltrans policy to avoid cultural resources whenever possible. Further investigations may be needed if the site(s) cannot be avoided by the Project. If buried cultural materials are encountered during construction, it is Caltrans policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. If human remains are discovered, the Caltrans Office of Cultural Resources will be contacted, and work will stop. The County Coroner and Likely Descendants will be contacted.

Water Quality and Stormwater Runoff

The Project is under the jurisdiction of the San Francisco Bay RWQCB. The Project is within the Caltrans right of way and would have to adhere to the requirements of the Construction General Permit (CGP) (NPDES No. CAS000002, State Water Resources Control Board Order No. 2009-0009-DWQ, adopted on November 16, 2010) to address potential temporary impacts during construction. The CGP became effective on February 14, 2011, and was amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ. Project improvements located within the Caltrans right of way must comply with the Statewide Stormwater Permit, Waste Discharge Requirements for the State of California Department of Transportation (Order No. 2012-0011 DWQ), NPDES No. CAS0000003), also referred to as the Caltrans NPDES Permit.

The project area is the San Francisco Bay Hydrologic Region and spans three groundwater basins: the Petaluma Valley Basin (2-001), the Napa-Sonoma Valley-Sonoma Valley subbasin (2-002.02), and the Napa-Sonoma Valley-Napa-Sonoma Lowlands subbasin (2-002.03) of the Napa-Sonoma Valley Basin (California Department of Water Resources. (2018) *Groundwater Basin Boundary Assessment)*. Per the Project's Preliminary Geotechnical Design Report (AECOM 2020a), groundwater was encountered in previous explorations for bridge structures along the Project corridor. Groundwater depths ranged from 4 to 10 feet below ground surface (bgs) near Tolay Creek and 2 to 5 feet bgs near Cullinan Ranch Wetland Restoration. Groundwater along the segment between Sonoma Creek and the Napa River was approximately 4 feet bgs.

The Project's receiving waters are Tolay Creek, Sonoma Creek, Napa River, and San Pablo Bay. The creeks flow north to south and drain into San Pablo Bay. Tolay Creek crosses at Son-37 PM 4.04 and Sonoma Creek crosses at Sol-37 PM R0.01. The eastern project limits end before the Napa River crossing, adjacent to the Mare Island interchange. The Napa River basin drains north to south and is joined by various tributaries. All creek crossings and surrounding water bodies in the project vicinity drain into San Pablo Bay.

The Project will have a New Impervious Surface area of 49.52 acres. The Project will have a total Disturbed Soil Area (DSA) of 87.42 acres. The Project will have the potential to cause stormwater impacts. Permanent BMPs will be considered to address the Project's impacts by promoting infiltration; reducing erosion; and collecting, retaining, and treating roadway

runoff. The San Francisco Bay RWQCB requires Caltrans District 4 projects that are subject to Section 401 Water Quality Certification to follow designs per the stormwater design criteria of the local city/county.

Temporary water quality impacts can result from sediment discharge from DSA and construction near water resources or drainage facilities that discharge to water bodies. Permanent impacts to water quality may result from the addition of impervious area; additional impervious area would prevent runoff from naturally dispersing and infiltrating into the ground, resulting in increased concentrated flow.

The risk level determination performed for the Project concluded that there is a medium sediment risk and high receiving water risk. Therefore, the Project must follow Risk Level 2 requirements for the CGP. Risk Level 2 requirements include Rain Event Action Plans and sampling for pH and turbidity. This risk level assessment may be updated in the PS&E phase after coordination with Caltrans.

Temporary construction site BMPs will be needed to limit sediment-laden flows from leaving the construction site, such as temporary silt fencing, temporary drainage inlet protection, and street sweeping. BMPs such as spill prevention control, materials management, and liquid waste management can be used to prevent accidental spills of toxic materials associated with construction operations and the use and storage of construction vehicles and equipment. The Project will need to undergo dewatering for excavations. However, because the construction method envisioned for widening the Tolay Creek Bridge and the Sonoma Creek Bridge will require no work proposed for creek channels, temporary stream diversions are not expected. If groundwater or surface water is found to be contaminated, a dewatering permit from the San Francisco Bay RWQCB would be required.

The Caltrans Municipal Separate Storm Sewer System (MS4) permit requires the Project to implement treatment BMPs within the Caltrans right of way because the proposed improvements result in the creation or replacement of more than 1 acre of impervious area. SR 37 is bound on most sides by wetlands and waters that are protected environmentally sensitive areas. Furthermore, there is very little upland available in which stormwater treatment devices could be placed. These potential treatment locations are further constrained by high groundwater in much of the Caltrans right of way, limiting the type of treatment device that could be used. Therefore, the potential locations for on-site treatment are limited. Treatment BMPs are proposed in all areas within the Caltrans right of way where site constraints do not limit the placement of treatment devices. There will be a treatment deficit of approximately 25 to 40 acres that must be treated off-site. Preliminary discussions with the City of Vallejo and the City of Sonoma have identified potential off-site mitigation projects. During the Project's design phase, these potential off-site mitigation projects will be determined as an alternative compliance approach.

Because the Project will have a Section 401 Water Quality Certification, it will be required to comply with the San Francisco RWQCB's Memorandum of California Department of Transportation Post-Construction Stormwater and Hydromodification Standards (California Integrated Water Quality System Place No. 212806 [2008]). Per this memorandum, the San Francisco Bay RWQCB requires Caltrans District 4 projects that are subject to Section 401

Water Quality Certification to design bioretention devices for full stormwater treatment and implement hydromodification assessment and management measures, if applicable, per the stormwater design criteria of the local city/county. The local agencies whose design criteria will be applied are the City of Vallejo and Napa and Sonoma Counties.

According to Caltrans District 4's Regional Board 2 Trash General Map Application (2020), the Project contains a low trash density area highway and medium trash density ramps. Therefore, the Project will be required to implement trash capture devices at the ramps. Additional trash device locations may be required due to the Section 401 Water Quality Certification criteria. The final design, selection of trash capture devices and locations, and determination of impervious area treated will be refined during the Design phase, when detailed design information is developed.

Paleontology

A paleontological locality search of the University of California Museum of Paleontology records indicated that no paleontological resources have previously been recorded within the Project limits. A field review was also conducted; no resources were identified. Three fossil localities occur in the vicinity of the Project but are not within the Project footprint.

Direct impacts to paleontological resources could occur during Project construction involving earth-moving activities, such as grading, excavating, and boring. Direct impacts are the destruction of fossil remains and the geographic, geologic, phylogenetic, and taphonomic information associated with them. There is potential for direct impacts to occur within two geological rock units at the western portion of the Project limits, but it is unlikely that any impacts will occur in geological rock units that make up the majority of the Project limits. Therefore, no effect is expected to occur. During the Design phase, Caltrans will determine whether a Paleontology Mitigation Plan is needed. If paleontological resources are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified paleontologist can assess the nature and significance of the find.

Biological Resources

Through field assessments and a review of special-status species data and literature, it was determined that the Biological Study Area (BSA) and adjacent areas provide potential habitat for federal- and State-listed species under USFWS jurisdiction. These include:

- Delta smelt (*Hypomesus transpacificus*; federally threatened, State endangered)
- California red-legged frog (*Rana draytonii*; federally threatened, State species of special concern)
- California Ridgway's rail (*Rallus obsoletus*; federally endangered, State endangered, State fully protected)
- Salt marsh harvest mouse (*Reithrodontomys raviventris*; federally endangered, State endangered, State fully protected)

- Soft bird's-beak (*Chloropyron molle* ssp. *molle*; federally endangered, State rare)

Federally listed species under NMFS jurisdiction also have potential habitat within or adjacent to the BSA. These species include:

- Chinook salmon Sacramento River winter-run Evolutionarily Significant Unit (ESU) (*Oncorhynchus tshawytscha*; federally endangered, State endangered)
- Chinook salmon Central Valley spring-run ESU (*Oncorhynchus tshawytscha*; federally threatened, State threatened)
- Steelhead Central-California coast Distinct Population Segment (DPS) (*Oncorhynchus mykiss*; federally threatened)
- Steelhead California Central Valley DPS (*Oncorhynchus mykiss*: federally threatened)
- North American green sturgeon southern DPS (*Acipenser medirostris*; federally threatened, State species of special concern)

Species protected by the Marine Mammal Protection Act under NMFS jurisdiction with potential habitat within or adjacent to the BSA include the California sea lion (*Zalophus californianus*), Pacific harbor seal (*Phoca vitulina*), and northern elephant seal (*Mirounga angustirostris*).

State-listed species that have potential habitat within or adjacent to the BSA include:

- California black rail (*Laterallus jamaicensis coturniculus*; State threatened, State fully protected)
- Longfin smelt (*Spirinchus thaleichthys*; federal candidate, State threatened)
- Swainson's hawk (*Buteo swainsoni*; State threatened)

State species of special concern with potential habitat within or adjacent to the BSA include:

- Pallid bat (*Antrozous pallidus*; State species of special concern)
- Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*; State species of special concern)
- San Pablo song sparrow (*Melospiza melodia samuelis*; State species of special concern)
- Sacramento splittail (*Pogonichthys macrolepidotus*; State species of special concern)
- Suisun shrew (*Sorex ornatus sinuosus*; State species of special concern)

- Western burrowing owl (*Athene cunicularia*; State species of special concern)

Estimated permanent and temporary impacts to jurisdictional waters and federally listed species are shown in Table 6-4 and Table 6-5 respectively.

Table 6-4: Estimated Permanent Impacts to Jurisdictional Waters and Federally Listed Species

Habitat	Alternative 3B (acres)	Alternative 3B Shading (acres)
Wetlands and other waters	9.05	0.70
Chinook salmon, steelhead, green sturgeon and delta smelt	3.78	0.27
Ridgway's rail	1.65	0.52
Salt marsh harvest mouse	1.67	0
California red-legged frog	1.51	0

Notes: All values are rounded up to the nearest 0.01 acre.
Acreages for habitats overlap substantially and are not intended to be summed.

Table 6-5: Estimated Temporary Impacts to Jurisdictional Waters and Federally Listed Species

Habitat	Alternative 3B (acres)	Alternative 3B Shading (acres)
Wetlands and other waters	7.02	1.76
Chinook salmon, steelhead, green sturgeon and delta smelt	4.98	0.38
Ridgway's rail	3.11	0.86
Salt marsh harvest mouse	3.24	0.86
California red-legged frog	0.78	0

Notes: All values rounded up to the nearest 0.01 acre.
Acreages for habitats overlap substantially and are not intended to be summed.

Nonnative invasive plant species were identified in the BSA. Preventative measures will be required during construction to avoid the spread of invasive species.

Avoidance and minimization measures are identified in the Environmental Document. These include seasonal or timing restrictions on work activities; limitations on activities to daylight hours that generate noise or vibration at levels that could harm wildlife, including specific requirements on pile driving; monitoring of work at and near sensitive biological habitat, wetlands, and tidal areas; erosion and turbidity control measures; and pre-construction biological surveys and protection during construction for nesting birds, bats, fish, species, and specific protected species.

Several measures are proposed as compensation to offset direct and/or indirect Project impacts to listed species habitat under the Preferred Alternative. The specific habitat and

mitigation for the Preferred Alternative will be determined during the Project's final design. Caltrans' mitigation proposal may include any one or a combination of the following approaches:

- Off-site mitigation through purchase of credits at approved conservation bank(s)
- Development of a compensation plan that will provide in-lieu funding to a nearby restoration program or restoration project to create, restore, and/or enhance resources adversely affected by the Project

Compensation will be determined in coordination with USFWS, NMFS, USACE, RWQCB, CDFW, and BCDC to address project impacts to listed species habitat.

Compensation for temporary impacts to protected natural resources will be achieved through on-site in-kind habitat restoration to pre-disturbance conditions.

6F. Air Quality Conformity

The Project meets both regional and project-level conformity requirements. As explained below, on November 1, 2022 FHWA concurred with Caltrans' project level conformity determination. Transportation conformity applies to regions or areas that are "nonattainment" or "attainment-maintenance" for National Ambient Air Quality Standards (NAAQS) for the standards that are or were previously exceeded or violated. Conformity analysis and determinations are addressed at both a regional and project-level basis.

Regional Conformity

Currently, the Project is listed in the Plan Bay Area 2040 financially constrained RTP and MTC's financially constrained 2021 Transportation Improvement Program (TIP) as part of an exempt Planning/Technical Study (RTP ID 17-10-0037 and TIP ID VAR190004). The design concept and scope of the Project are consistent with the planning project. The next RTP/SCS update for the PBA is Plan Bay Area 2050, which MTC recently adopted (October 21, 2021). SR 37 improvements are included in this plan under two separate line items. Conformity status information is discussed in more detail in the Project's Environmental Document.

Project-Level Conformity

Project-level conformity requires project sponsors to demonstrate that their transportation project will not cause or contribute to any new localized exceedances of a pollutant for which the region is not currently in attainment or maintenance. The San Francisco Bay Area and project location are within a non-attainment area for particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) and ozone (O_3). Therefore, project level conformity requires demonstration that the Project will not contribute to violations, increase the frequency or severity of any existing air quality violations, or delay timely attainment of any NAAQS or any required interim emission reductions or other State Implementation Plan (SIP) milestones.

A project-level conformity analysis applies to the Project for both pollutants ($PM_{2.5}$ and O_3) under Title 40 Code of Federal Regulations (CFR) Section 93.109. Current guidance from FHWA and Caltrans states that a project-level carbon monoxide CO hot-spot analysis is no longer required to demonstrate project-level conformity. Similarly, hot-spot analysis for $PM_{2.5}$ is only required for projects found to meet the definition of a Project of Air Quality Concern (POAQC) by the region's Metropolitan Planning Organization, which is the MTC in the San Francisco Bay Area. The Bay Area's Air Quality Conformity Task Force (AQCTF) makes this determination. The Project was found not to be a POAQC by MTC's AQCTF at its May 27, 2021, consultation meeting. Therefore, a $PM_{2.5}$ hot-spot analysis is not required, as 40 CFR 93.123(c)(5) states that:

> "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site."

Since construction of the Project is expected to last less than 5 years, an evaluation of CO, PM_{10}, and $PM_{2.5}$ emissions during project construction is not required for project-level conformity determination.

Interagency Conformity Consultation

MTC, as the project sponsor, initiated consultation with MTC's AQCTF by submitting a Project Assessment Form for $PM_{2.5}$ Interagency Consultation in 2021. The AQCTF considers future traffic conditions with and without the project and whether the project meets the specific regulatory definition of a POAQC set forth in 40 CFR Part 93. The AQCTF determined that the Project is not a POAQC at their May 27, 2021 consultation meeting. Further explanation and documentation are included in the Environmental Document.

FHWA Concurrence on Project Level Air Quality Conformity Determination

The Federal Clean Air Act requires that proposed projects are consistent with air quality goals and requirements. Caltrans submitted a request for a project level conformity determination for the project on October 5, 2022. This is required because the project (and Bay Area region) are within an area designated non-attainment for O_3 and $PM_{2.5}$. FHWA concurred that project-level transportation requirements of 40 CFR Part 93 have been met, and that the project conforms with the State Implementation Plan (SIP) in accordance with CFR Part 93. This documentation is included in the Project's Environmental Document.

6G. Title VI Considerations

Title VI of the Civil Rights Act of 1964 states:

> "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Caltrans recognizes its leadership role and unique responsibility in State government to eliminate transportation barriers that have divided communities and amplified racial inequities. Caltrans is committed to provide more equitable transportation for all Californians by creating more transparent, inclusive, and ongoing consultation and collaboration processes and engaging with the communities most impacted by structural racism in transportation decision-making, policies, processes, planning, design, and construction. Caltrans is also committed to increase pathways to opportunity for minority-owned and disadvantaged business enterprises and for individuals who face systemic barriers to employment. The goal is to create a more resilient transportation system that distributes the benefits and burdens of the system more equitably to the current and future generations of Californians.

The project will not cause disproportionately high and adverse effects on any minority or low-income populations. The project will not reduce or limit access to businesses or residences, including shopping areas, schools, hospitals, or recreation areas. The project will comply Title VI of the Civil Rights Act of 1964.

The Project will provide congestion relief on SR 37 where substantial traffic queuing and delays occur due to lane reductions at Mare Island and near the SR 121 intersection. The Project will not have an adverse impact on local or regional communities or population, as there are no property acquisitions or changes that affect any residential, commercial, or community land uses. Surrounding land uses along the Project corridor are generally rural, including substantial land areas dedicated to wildlife preserve areas, and these land uses will not change because of the Project. The Project will provide improved transportation connectivity between the North Bay counties of Marin, Napa, Sonoma, and Solano.

6H. Noise Abatement Decision Report

This section describes the Noise Abatement Decision Report, which:

- Is an evaluation of the reasonableness and feasibility of incorporating noise abatement measures into the Project,
- Constitutes the preliminary decision on noise abatement measures to be incorporated into the EIR (if applicable), and
- Is required for Caltrans to meet 23 CFR 772 of the FHWA standards.

The Noise Abatement Decision Report is based on the Project-specific Noise Study Report (NSR) (Illingworth and Rodkin, September 2021).

The Project meets the definition of a “Type I project” requiring evaluation of noise impacts and abatement because it will involve the addition or relocation of highway lanes and will receive federal funding from the FHWA (administered through Caltrans). The Project therefore requires noise abatement to be considered for qualified impacted land uses.

Vehicles traveling on SR 37 are the primary sources of noise for land uses located along the project alignment. Noise-sensitive land uses, or “receptors,” along or near SR 37 include residential areas, recreation areas, public or nonprofit institutional structures and interior

uses, and other developed land uses. The NSR documents the noise measurements, calculates future noise levels with the construction and operation of the Project, and identifies measures to reduce construction noise levels and to abate traffic noise levels at adjacent receptors. The FHWA Traffic Noise Model (TNM) 2.5 was used to calculate existing and future traffic noise levels and analyze traffic noise impacts. The model was validated based on measured noise and traffic conditions documented during the field survey. After validation, noise levels were assessed in TNM 2.5 based on future traffic conditions. The No-Build Alternative and the four Build Alternatives were assessed.

Under Build conditions, traffic noise levels are predicted to approach or exceed the noise abatement criteria at one receptor at 29790 Tolay Creek Road and at six receptors at the Tubbs Island Trailhead, 5000 Sears Point Road, the Sonoma Creek Trail Wildlife Viewing Point, the Sonoma Creek Trailhead, the Skaggs Island Road Trailhead, and the Cullinan Ranch Trailhead. Noise abatement was considered at these locations. Seven potential barriers were evaluated for feasibility and acoustical reasonableness (i.e., would achieve the Caltrans noise reduction goals). One barrier, Barrier 4, was found to be feasible and to achieve the Caltrans acoustical design goal (minimum 7-decibel reduction for at least one receptor) for noise reduction. The other barriers evaluated did not meet the minimum noise reduction criteria. Barrier 4 would meet feasibility and reasonableness standards at heights of 14 to 16 feet. Consistent with current guidelines, a reasonable allowance for Barrier 4 was calculated at $107,000.

The location of Barrier 4 would have to be on the edge of the Sonoma Creek Bridge, in the WB direction. This location on the bridge would provide the necessary line-of-sight interruption to abate vehicle noise originating from the cars traveling on the bridge. The construction estimate for Barrier 4 was estimated at approximately $2 million. This estimated cost included the extra cost of placing a wall on the bridge structure, including materials and labor, contractor mobilization, access, and staging. The cost estimate of $2 million exceeds the $107,000 reasonable allowance, and therefore although the wall would be feasible with respect to noise reduction, it is not considered reasonable. Barrier 4 was not included in the preliminary design.

Final Noise Abatement Decision

The 45-day public review period for the Draft Environmental Document was from January 13 through February 28, 2022, and a virtual public meeting was held on February 2, 2022. Comments from the public and agencies, and responses, are included in Appendix K of the Final Environmental Document. There were no comments received regarding noise abatement or the evaluation of the potential noise barriers described in this section. Several general comments were made that construction noise should be evaluated and minimized, and this topic is addressed in the Draft and Final Environmental Documents. The final decision on noise abatement for this project is that of the potential barriers evaluated, only one was identified as acoustically feasible (Barrier 4), but Barrier 4 was determined not reasonable in the Noise Abatement Decision Report because the estimated cost of the wall on the Sonoma Creek Bridge exceeded the cost allowance. Therefore, no traffic-related noise abatement is required or proposed for this project. Construction noise minimization measures are specified in the Final Environmental Document.

6I. Life-Cycle Cost Analysis

A Life-Cycle Cost Analysis (LCCA) and Preliminary Structural Pavement Design Memorandum were prepared using the guidelines presented in the Caltrans Highway Design Manual, Caltrans LCCA Procedures Manual, and RealCost v2.5.4CA software for the Preferred Alternative.

According to HDM Index 612.3, the pavement design life for the mainline traveled way, ramp traveled way, and intersection widening projects shall be (a) the remaining pavement service life of the adjacent roadway (but not less than the project design period as defined in HDM Index 103.2), (b) 20 years, or (c) 40 years depending on which pavement design life produces the lowest life-cycle costs.

The LCCA includes comparisons of design lives of flexible pavements for 20 years and 40 years.

Table 6-6 is a summary of the Traffic Index (TI) values, which are based on a projected growth rate of 3% and were used in the design of the proposed pavement structural sections.

Table 6-6: Summary of Traffic Index Values

Design Life	Traffic Index (TI) Values		
	All Lanes	HOV Lane	Travel Lanes
20 years	13.0	11.0	13.0
40 years	14.5	12.0	14.0

Two structural pavement section alternatives included in the LCCA are described below with design factor for TI and R-value assumptions. These pavement sections apply to widened traveled lanes and shoulders for the Project's Build Alternatives.

- Flexible pavement (design life of 20 years): Design factors are TI = 13.0, R-value = 15

Section Component	Thickness (feet)
HMA-A	0.85
Class 2 AB	0.90
Total	1.75

- Flexible pavement (design life of 40 years): Design factors are TI = 14.5 R-value = 15

Section Component	Thickness (feet)
HMA-A	0.95
Class 2 AB	0.95
Total	1.90

A cost comparison was made using the RealCost v2.5.4CA software, which resulted in the 40-year design life Flexible Hot Mix Asphalt pavement section being the low-cost alternative.

The LCCA performed for the Project identified a 40-year life to be cost-effective for widening segments of the Project. However, widening of SR 37 for the Project will be limited to the outside lanes and shoulders. New pavement with a 40-year design life adjacent to the existing, relatively older pavement will not be of any advantage with respect to future rehabilitation of SR 37. The Project is being developed with a 20-year project design life, as agreed by the PDT.

After discussions with the Caltrans Materials Lab on the LCCA and the concerns that the materials properties in the CalME database might change between the PA&ED phase, potentially resulting in a thicker Hot Mix Asphalt–Type A (HMA-A) section than assumed in the LCCA, it was agreed that an additional 0.10 foot of HMA-A, 0.10 foot of Hot Mix Asphalt–Open Graded Friction Course (HMA-O) with 1 foot of additional roadway excavation, replacement of 1 foot of aggregate subbase, and subgrade enhancement geotextile would be included in the design. The resulting design life of 20 years for the structural section design is shown below and is reflected in the preliminary cost estimate.

Section Component	Thickness (feet)
HMA-O	0.10
HMA-A	0.95
Class 2 AB	0.90
Class 3 AS	1.00
Subgrade Enhancement Geotextile	n/a
Total	**2.95**

6J. Reversible Lanes

In 2016, California's Governor signed Assembly Bill 2542 into law. It requires Caltrans to demonstrate that reversible lanes have been considered for any project that would increase capacity or realign a highway. Reversible lanes are lanes that can be used in either direction, depending on the traffic flow and congestion patterns. The movable barrier considered under Alternative 1 meets the requirement for considering reversible lanes consistent with Assembly Bill 2542. Alternative 1 was considered but rejected, as discussed in Section 5B, Rejected Alternatives. The alternative of a fixed barrier and a separated reversible lane section was considered but rejected, as discussed in Section 5B, Rejected Alternatives.

7. OTHER CONSIDERATIONS AS APPROPRIATE

Public Hearing Process

Caltrans is the lead agency under both NEPA and CEQA.

The Notice of Completion was filed on January 10, 2022. The DEIR/EA was circulated for public review and comment period from January 13, 2022, to February 28,2022. A virtual public meeting was held on Wednesday, February 2, 2022, from 5:30 p.m. to 7 p.m. The public review and comment process is described further in Section 3, Community Interaction.

Eight agency comment letters, 14 comment letters from organizations, 27 comments from individuals, and 48 comments from individuals regarding the PEL studies by Caltrans were submitted via USPS or email during the public review and comment period. The Final EIR/EA presents the public comments and the PDT's responses. Representative comment topics or concerns included opinions and input regarding the Preferred Alternative; sea level rise adaptation and flood inundation risk; preferences for incorporation of measures for climate adaptation; preferences for immediate congestion relief; recommendations for minimizing impacts to wetlands and habitat, and mitigation for unavoidable impacts; questions about installation of sheet piles and groundwater circulation; a request that the project address public shoreline access; support for maintaining bicycle access within the shoulders and bicycle safety; resource agency concerns regarding new lighting; comments on the median and outside shoulder barrier heights and design; and safety and access concerns regarding access to adjoining properties.

Route Matters

Route adoption is not required.

There are no relinquishments within the Project limits.

Permits

Table 7-1 lists the permits, reviews, and approvals that will be required for Project construction. Permit applications will be submitted during the Project Design phase.

A Section 408 permit is not required. A Section 408 permit is required if a project will make alterations to or temporarily or permanently occupy or use any USACE federally authorized Civil Works project, such as a dam, hydropower, a levee system, or navigation. The Project will not involve work within or crossing a federal navigation channel or a federal levee. The National Levee Database indicates that the levees along SR 37 are locally maintained.

Table 7-1: Project Permits and Approvals

Agency	Permit/Approval/Acknowledgement	Status
Federal Highway Administration	Concurrence with project's conformity to the Transportation Improvement Program (TIP) under the federal Clean Air Act and other requirements. The TIP is a supporting document of the MTC 2050 Regional Transportation Plan.	FHWA concurred on November 1, 2022 with Caltrans' air quality conformity determination, and that the project conforms with the State Implementation Plan (SIP). The Interagency Air Quality Conformity Task Force determined that the Project is not a Project of Air Quality Concern at their May 22, 2021 meeting.
US Fish and Wildlife Service	Endangered Species Act Section 7 consultation for threatened and endangered species (terrestrial) United States Department of Transportation (USDOT) Section 4(f) Use Acknowledgement	Caltrans has initiated Section 7 consultation with submittal of a biological assessment to USFWS, following identification of the preferred alternative. Consultation will continue into the design phase. Based on the preferred alternative, USFWS would issue either a letter of concurrence with the findings of effect in the Biological Assessment, or a biological opinion which may authorize take of federally listed species to Caltrans. Right of Way acquisition and temporary construction easements (TCEs) would be sought during the design phase. Sliver acquisitions and TCEs are necessary to accommodate widening and temporary construction within refuge lands. USFWS has acknowledged a Section 4(f) de minimis use.
National Marine Fisheries Service	Endangered Species Act Section 7 consultation for threatened and endangered species (fish) Magnuson-Stevens Fishery Conservation Management Act consultation for Essential Fish Habitat	Caltrans has initiated consultation with submittal of a Biological Assessment to NMFS, following identification of the Preferred Alternative. Consultation will continue into the Design phase. The Biological Assessment includes analysis of and request for consultation for Essential Fish Habitat impacts, as appropriate. Based on the preferred alternative, NMFS will issue either a letter of concurrence with the findings of effect in the Biological Assessment or a Biological Opinion allowing take of federally listed species by Caltrans.
State Historic Preservation Officer	National Historic Preservation Act Section 106 consultation	Caltrans' consultation on identification of cultural resources eligible for the National Register of Historic Places was completed on December 23, 2016. Results of the studies were submitted to SHPO were received, and consultation was completed.

Agency	Permit/Approval/Acknowledgement	Status
US Army Corps of Engineers	Preliminary Jurisdictional Determination for jurisdictional wetlands and waters of the United States Clean Water Act Section 404 and Rivers and Harbors Act Section 10 permit for placement of fill in waters of the United States	A wetland delineation was completed and will be submitted to USACE for concurrence. A permit application will be submitted during the project Design phase.
US Coast Guard	USCG Bridge Permit Amendment	Alternative 3B was originally identified as involving work in Sonoma Creek, but has been modified to avoid in-water work. No Bridge Permit Amendment is anticipated, but Caltrans will consult with USCG during final design to verify that no vertical or horizontal clearances impair the navigation channel and any agreements needed for temporary construction activities.
Interagency Air Quality Conformity Task Force	Concurrence that the Project is not a Project of Air Quality Concern	The Metropolitan Transportation Commission's Air Quality Control Task Force determined that the Project is not a Project of Air Quality Concern on May 22, 2021.
San Francisco Bay Regional Water Quality Control Board	Section 401 Water Quality Certification or waiver and or/Porter Cologne Act Waste Discharge Requirements Compliance with the NPDES Construction General Permit	A joint "Application for 401 Water Quality Certification" and/or "Report of Waste Discharge" will be submitted during the Project Design phase. A statewide NPDES permit for construction and operations will be in effect for the Project. Compliance review will take place during the Design phase.
California Department of Fish and Wildlife	California Fish and Game Code Section 1602 Lake and Streambed Alteration Notification for effects to nontidal channels and water bodies CFGC Section 2081 Incidental Take Permit if take of State-listed species is anticipated USDOT Section 4(f) Use Agreement/Acknowledgement	An application for a CFGC Section 1602 Lake and Streambed Alteration Agreement will be submitted during the Project Design phase. An application for a CFGC Section 2081 Incidental Take Permit will be submitted during the Project Design phase, if required. Right of Way acquisition and TCEs would be sought during the design phase. Sliver acquisitions and TCEs are necessary to accommodate widening and temporary construction within NSMWA lands. Caltrans will require an acknowledgement of Section 4(f) de minimis use.
San Francisco Bay Conservation and Development Commission	A BCDC permit will be required for development within BCDC jurisdictions.	The BCDC permit application will be submitted during the Project Design phase.

Agency	Permit/Approval/Acknowledgement	Status
SMART (Northwestern Pacific Railroad line)	A railroad agreement may be required for work at the crossing near Tolay Creek Bridge. General Order 88-B Approval for Modification of an Existing Rail Crossing	An application will be submitted during the Design phase.
California Transportation Commission	CTC approval to implement tolling	This approval will be requested after the environmental review phase is completed.

Notes:
BCDC = San Francisco Bay Conservation and Development Commission
Caltrans = California Department of Transportation
CDFW = California Department of Fish and Wildlife
CFGC = California Fish and Game Code
CTC = California Transportation Commission
FHWA = Federal Highway Administration
NMFS = National Marine Fisheries Service
NPDES = National Pollutant Discharge Elimination System
RWQCB = Regional Water Quality Control Board
SHPO = State Historic Preservation Officer
SMART = Sonoma-Marin Area Rail Transit
USACE = US Army Corps of Engineers
USCG = US Coast Guard
USFWS = US Fish and Wildlife Service

Cooperative Agreements

A Cooperative Agreement addressing the PA&ED and PS&E phases has been executed between Caltrans and SCTA, using the Cooperative Agreement Report as the authorizing document (Agreement No. 04-2623, dated September 24, 2019); the Cooperative Agreement is provided as Attachment I-1.

To reflect an integrated PS&E delivery and update the implementing agency, Cooperative Agreement No. 04-2623 will be amended and a separate Cooperative Agreement will be prepared between Caltrans and MTC for the PS&E and Right of Way phase of the Project. A draft Cooperative Agreement No. 04-2905 is provided as Attachment I-2.

Caltrans will be the advertising, awarding, and administering agency. A Construction Cooperative Agreement will be executed between Caltrans and MTC during the Design phase.

A Construction Cooperative Agreement will be prepared between Caltrans and MTC at a later date for a separate highway planting (or replacement highway planting) contract, including a 3-year plant establishment period.

When approved, the Project Report will be the authorizing document between Caltrans and the local agency for preparation of the PS&E, Right of Way and Construction Cooperative Agreements.

Public Boat Ramps

The project area does not contain any public boat ramps.

Transportation Management Plan

A Transportation Management Plan (TMP) will be required during the construction of proposed improvements to minimize delay and inconvenience to the traveling public. The

TMP for the Project will be developed and refined during the PS&E phase, supported by detailed traffic studies to evaluate traffic operations. The proposed construction includes roadway work that will require lane closures and/or detours that will require installation of temporary railing (K-rail) during construction to ensure worker safety and to isolate the work zone from the adjacent traffic. The need for temporary lane closures during off-peak hours or at night or short-term detour routes for ramp closures will be identified during the final Design phase. No full mainline closures, ramp closures, or local street closures for extended periods of time are anticipated. The TMP will include briefing meetings with local public officials and a public information program to inform the public of project progress and upcoming closures and detours. The TMP will also include a press release to notify and inform motorists, businesses, community groups, local entities, emergency services providers, bicyclists, pedestrians, and elected officials of upcoming closures or detours.

Other aspects of the TMP may include coordination with ride-sharing agencies, transit operators, emergency services providers, bicyclists, pedestrians, and neighborhood and special interest groups; consideration of construction strategies and contract incentives; CHP and local law enforcement involvement; and development of contingency plans. Various TMP elements such as use of portable CMSs and a CHP Construction Zone Enhanced Enforcement Program may be used to alleviate and minimize delay to the traveling public.

The preliminary estimated TMP cost is approximately $1,590,000.

The Transportation Management Plan Data Sheet has been prepared for the Preferred Alternative (see Attachment J).

Table 7-2 lists the TMP strategies and contains a brief description of each item that should be further detailed in the TMP. Additional aspects of the TMP will include ride-sharing agencies, transit operators, and neighborhood and special-interest groups; consideration of construction strategies and contract incentives; and CHP and local law enforcement involvement.

Table 7-2: Transportation Management Plan Strategies

Strategy	Description
Public Information	Community outreach strategies are to inform motorists, bicycle users, and businesses affected by construction. Publish daily construction activities in the local newspaper or on a website to advise of changes to traffic patterns. Provide toll-free number to motorists to provide information or assistance with complaints.
Integrated Incident / Emergency Management Program	The use of electronics, computers, and wireless communication systems to coordinate real-time responses to incidents and emergencies by various emergency providers and enforcement agencies, particularly around construction sites.
Freeway Service Patrol	Dedicated patrol trucks along construction site, particularly during peak commute hours.

Strategy	Description
California Highway Patrol	Additional CHP presence will be required during temporary partial and full freeway and ramp closures.
Construction Zone Enhanced Enforcement Program	Cooperative program between Caltrans and the CHP for proactive police enforcement at construction sites on the California Highway System.
Portable Changeable Message Signs	CMSs are used to inform motorists about traffic conditions and future roadwork.
Traffic Control Improvements	Examples include changes in signal timing, speed zone reductions, and railroad crossing controls.
Comprehensive GIS/Database/Mapping System	Computer mapping and database system centralizing various types of information on construction detours, transportation, modes, travel services, major destinations, planned development, etc.
Coordination of Construction Schedules	Continuous ongoing coordination of the schedules of construction projects with all the stakeholder agencies.
Contingency Plans	Specific actions that will be taken to minimize impacts on traffic when the congestion or delay exceeds original estimates due to unforeseen events such as work-zone collisions, higher-than-predicted traffic demand, or delayed lane closures. Information is to be coordinated and disseminated among construction, emergency service, and public safety providers.
Workshops	Workshops to be conducted with the general public and specific stakeholders before the Construction phases that will affect the stakeholders.

Notes:
CHP = California Highway Patrol
CMS = Changeable Message Sign
GIS = Geographic Information System

Stage Construction

To ensure that traffic operations are not affected, detour and construction staging plans will be developed to preserve or minimize the impact to the existing number of traffic lanes on SR 37 in each direction throughout the construction period, except during critical short-term construction activities. Twenty-four-hour traffic counts will be performed to assess the impact of any needed lane closures. Preliminary information concerning lane closures will be used to develop feasible staging plans. Impacts to access for local business and private properties will be carefully considered in the staging plans. If nighttime closures are required, acceptable detours will need to be put in place.

The details of how traffic will be handled during construction will be presented in the TMP. Public outreach will be performed ahead of time to ensure that closures are announced in a timely manner. Most of the construction activity will be done behind temporary railing (K-rail) to keep lane closures and traffic disruption to a minimum.

It is anticipated that each direction on SR 37 will need be closed approximately 12 times during the estimated 2 years of construction under the Preferred Alternative. It is expected that the closures will occur during the low-volume periods, which are estimated to be

between 9 p.m. and 4 a.m. in the WB direction and between 9 p.m. and 5 a.m. in the EB direction. Advanced information signs through existing CMS and portable CMS signs will be provided on I-80 and US 101 to inform the traveling public of the upcoming closures. The anticipated detours for northbound traffic will be through I-580 and the Richmond–San Rafael Bridge, and anticipated detours for SB traffic through SR 121 to the north. It is anticipated that the closures will require approval of the Lane Closure Committee and that they will be further evaluated during the PS&E phase of the Project.

Several Construction phases are associated with each construction stage. The construction sequence of the major construction activities for each stage is presented below.

The Project can be constructed in four main stages. The first stage involves widening the EB pavement. The second stage involves widening the WB pavement. The third stage entails removing and reconstructing the median barrier and pavement. The fourth stage will grind and overlay the existing pavement and place final striping.

Temporary construction access will be necessary at and beneath the Sonoma Creek Bridge for access to the bridge railings and underside of the bridge. A temporary barge may be needed in Sonoma Creek for this work. Temporary access to the wetlands and waters directly below and adjacent to the Sonoma Creek Bridge during construction is anticipated for installation of a debris catchment system. Caltrans would use vehicles and person-lifts to reach the underside of the bridge. Access through wetland vegetation will use mats to minimize impacts on existing vegetation. Work on the underside of the bridge directly above the waters will be conducted from a barge-mounted lift. Alternative 3B previously considered a temporary falsework trestle adjacent to Sonoma Creek Bridge over 1 to 3 years, but the trestle has been removed from the project.

SR 37 traffic must be maintained during construction, and construction staging areas will be needed along or near the route for equipment and materials. Construction staging areas are determined during final project design, but one potential location on private land has been preliminarily identified. The private land parcel will involve the use of a portion of the Wing and Barrel Ranch land adjacent to SR 37 off Noble Road; this use will require agreement with the ranch and restoration of the site after the completion of construction.

Accommodation of Oversize Loads

The Project will not restrict the movement of oversized loads through the area.

Graffiti Control

Generally, the Project is not in a graffiti-prone area. The Project proposes new retaining walls west of SR 121 and overhead signs. Graffiti control features such as anti-graffiti coatings on retaining walls, bridge railings, and overhead signs that allow easier cleanup and maintenance will be incorporated into the design.

Asset Management

This project does not have any funding from SHOPP. Currently, there is no requirement to track the assets in this project because there is no SHOPP funding. In the future, if this project gets any SHOPP funding, it will be subject to the SHOPP's asset management requirements. Performance measures of SHOPP assets will be determined when SHOPP funds are identified.

Complete Streets

The intent of Caltrans Director's Policy DP-37 on Complete Streets is to ensure that travelers of all ages and abilities can move safety and efficiently along and across a network of "complete streets." This policy establishes a requirement for all transportation projects funded or overseen by Caltrans—in locations with current and/or future pedestrian, bicycle, or transit needs—to provide comfortable, convenient, and connected Complete Streets facilities for people walking, biking, and taking transit or passenger rail. Opportunities to include Complete Streets elements are evaluated to improve safety, access, and mobility for all travelers.

The Preferred Alternative does not propose new pedestrian, bicycle facilities or transit stops, nor does it include any preferred active transportation facilities appropriate to the context of SR 37. A Class I bike path, physically separated from the highway, is being considered as part of the future Resilient 37 Project.

The Preferred Alternative will provide 8-foot wide outside shoulders except at Sonoma Creek Bridge to maintain bicycle and pedestrian access, including access at Sonoma Creek Bridge in both directions. Four-foot wide outside shoulders will be provided at Sonoma Creek Bridge.

Climate Change Considerations

Greenhouse Gas

A GHG emissions analysis was conducted as part of the Air Quality Study and associated Air Quality Report prepared by Illingworth and Rodkin in September 2021. GHG emissions impacts for the No-Build and Build Alternatives were computed for the existing year (2019), year 2040, and design year (2045) and are summarized in Table 7-3. A VMT analysis was done on the four Build Alternatives as part of the TOAR. The VMT results are also summarized in Table 7-3.

Table 7-3: Modeled Annual CO_2e Emissions and Vehicle Miles Traveled, by Alternative

Alternative	GHG Emissions (MT CO_2e/year)	Difference Between No Build and Build (MT CO_2e/year)	Change Between Existing and Build (MT CO_2e/year)	Daily VMT	Daily Difference in VMT Build and No Build	Annual VMT[1]	Annual Difference In VMT Build and No Build
Baseline 2020	24,555,199	NA	NA	149,948,925	NA	54,768,844,687	NA
No-Build 2025	21,996,764	NA	NA	156,255,326	NA	57,072,258,000	NA
Build Alternatives 1 and 2 2025	21,995,070	-1,694	-2,560,129	156,261,672	6,346	57,074,575,829	2,317,829
Build Alternatives 3A and 3B 2025	21,995,577	-1,187	-2,559,622	156,264,925	9,599	57,075,763,812	3,505,812
With Tolling 2025 westbound only (Tolling Option 1)[2]	21,993,294	-3,470	-2,561,905	156,238,658	-16,668	57,066,170,012	-6,087,987
With Tolling 2025 both Directions (Tolling Option 3)	21,996,633	-132	-2,558,567	156,244,160	-11,166	57,068,179,529	- 4,078,471
No-Build 2040	21,394,504	NA	NA	175,174,532	NA	63,982,497,938	NA
Build Alternatives 1 and 2 2040	21,387,079	-7,425	-3,168,120	175,199,916	25,384	63,991,769,254	9,271,316
Build Alternatives 3A and 3B 2040	21,417,161	22,657	-3,138,039	175,212,926	38,394	63,996,521,187	14,023,249
With Tolling 2040 westbound only (Tolling Option 1)[2]	21,387,803	-6,701	-3,167,397	175,107,860	- 66,672	63,958,145,988	-24,351,950
With Tolling 2040 both Directions (Tolling Option 3)	21,389,387	-5,117	-3,165,812	175,129,867	- 44,665	63,966,184,056	-16,313,882
No-Build 2045	21,628,584	NA	NA	181,480,934	NA	66,285,911,251	NA
Build Alternatives 1 and 2 2045	21,616,583	-12,001	-2,938,616	181,512,664	31,730	66,297,500,396	11,589,145
Build Alternatives 3A and 3B 2045	21,687,005	58,421	-2,868,195	181,528,926	47,992	66,303,440,312	17,529,061
With Tolling 2045 westbound only (Tolling Option 1)[2]	21,679,909	51,325	-2,875,290	181,397,594	-83,340	66,255,471,314	-30,439,937
With Tolling 2045 both Directions (Tolling Option 3)	21,684,863	56,279	-2,870,336	181,425,103	-55,831	66,265,518,898	-20,392,353

Source: Illingworth & Rodkin using CT-EMFAC 2017 version 1.0.2, 2021.
[1] Annual VMT values from MTC model, provided by Elite Transportation Group, Inc., March 8, 2021, with updated tolling options September 2022.
[2] Tolling in one direction (westbound only) is also referred to as Tolling Option 1. Tolling in both directions is also referred to as Tolling Option 3. These options are estimated for Alternatives 3A/3B
Notes:
CO_2e = carbon dioxide equivalent
MT = metric ton(s)
NA = not applicable
VMT = vehicle-miles traveled

As shown in Table 7-3, under the Project, the mobile GHG emissions in the region will decrease from baseline levels due to improvements in vehicle technology with or without the Project. Modeling shows that Build Alternatives 1 and 2 will have lower annual GHG emissions than the No-Build Alternative for all future years. Alternatives 3A and Preferred Alternative 3B will have 1,187 metric tons of carbon dioxide equivalent (CO_2e) less than the No-Build Alternative. In 2040 and 2045, the GHG emissions will be higher than the emissions under the No-Build Alternative by 22,657 metric tons and 58,421 metric tons of CO_2e per year, respectively. The project will improve traffic conditions on SR 37 and at the indicated intersections. Reducing queues and stop-and-go traffic will reduce idling and GHG emissions due to idling. Factoring these benefits in could result in additional GHG emissions reduction benefits compared to the No-Build Alternative.

In summary, there would be no increase in VMT and GHG emissions with Alternative 3B (the preferred alternative) with implementation of the proposed full time HOV lane in each direction, and tolling of the proposed general purpose lane in either one direction or both directions. The Project sponsors are committed to work with Caltrans to manage toll rates and control potential HOV violation rates within the corridor, and help support implementation of bus service routes along SR 37, additional Park and Ride availability, and ride sharing services. See Attachment N for additional discussion on how the project will support transit and prioritize rideshare along the corridor.

Sea Level Rise

SR 37 relies on a complex interconnected system of levees along Tolay Creek, Sonoma Creek, the Napa River, and San Francisco Bay for flood protection. According to the UC Davis Stewardship Study, SR 37 between SR 121 and the Mare Island interchange was identified as the most at risk to SLR impacts when consequence factors such as capital improvement costs, economic impacts on commuters and goods movement, impacts to public recreational activities, and impacts to alternate routes are considered.

In 2018, the California Ocean Protection Council (OPC) released SLR guidance for California that provides probabilistic SLR projections for a range of future scenarios. The SLR projections up to 2100 for San Francisco Bay are shown in Table 7-4. The range in projections represents uncertainties in climate models and scientific understanding of the physical processes associated with climate change. The OPC guidance presents probabilistic projections to capture this uncertainty, and Table 7-4 shows SLR values with different probabilities of exceedance to allow asset managers to make informed, risk-based decisions on future planning and design. The OPC guidance recommends that projects with low risk aversion consider the upper end of the projected "likely range" of probabilities (i.e., the 66% likelihood) and that projects with medium to high risk aversion consider the 0.5% scenario. This project considers low to high risk aversion scenarios, with an analysis that focuses on the 0.5% likelihood scenario to the assumed design life 2040 because it is a critical transportation asset. Table 7-4 shows the range of projected SLR scenario values from low risk to high risk aversion (66%, 5%, and 0.5% probabilities) for each decade up to 2100.

The OPC guidance also includes an extreme risk aversion scenario called the "H++ Scenario." This scenario has an unknown probability and assumes that extreme SLR

resulting from the loss of the West Antarctic ice sheet occurs in each projected year. This extreme scenario is typically used for projects with high stakes and long-term decision-making processes. The proposed project is not considered to be high stakes and is presented as an effort to address congestion in the immediate future. The "H++ Scenario" is included in Table 7-4 to show all projected scenarios provided by the OPC.

Table 7-4: Summary of State of California SLR Projections for San Francisco Bay

Modeled Year	Projected SLR Increase with a 66% Likelihood (feet)	Projected SLR Increase with a 5% Likelihood (feet)	Projected SLR Increase with a 0.5% Likelihood (feet)	H++ Scenario Extreme Risk Scenario (feet)
2030	0.5	0.6	0.8	1.0
2040	0.8	1.0	1.3	1.8
2050	1.1	1.4	1.9	2.7
2060	1.5	1.8	2.6	3.9
2070	1.9	2.4	3.5	5.2
2080	2.4	3.0	4.5	6.6
2090	2.9	3.6	5.6	8.3
2100	3.4	4.4	6.9	10.2

Source: OPC 2018.
Projections assume a high emissions scenario (Representative Concentration Pathway (RCP) 8.5). The 66% projections assume a low risk aversion scenario, and only upper end range estimates are shown in this table.
Notes:
SLR = Sea Level Rise

On Project completion in 2025, the Project will be protected from frequent tidal inundation by the existing levees and elevated roadway. However, due to the elevation of the shoreline compared to extreme tides, it may still be exposed to temporary flooding during storm conditions or in the event of a levee breach at Tubbs Island. Comparing the elevation of the shoreline protection features with specific amounts of SLR and storm surge can show which portions of the roadway are vulnerable to flooding.

In isolation, SLR will have a limited impact on the Project. Under a likely scenario in the relatively near future (5% probability by 2040), SLR is projected to cause a 1-foot increase in the daily high tide, which could lead to permanent inundation of about 600 feet of the roadway near Mare Island if no adaptation measures are taken. In combination with extreme tides, SLR would increase the frequency and magnitude of temporary flooding of the roadway. For example, without the estimated SLR, the current 50-year storm is predicted to cause flooding in about 2 miles of the highway and overtopping in portions of the levees around Tubbs Island. Areas of flood impacts to the highway for various storm events are included as Attachment K.

Based on the shoreline analysis in the Project area, the following flood impacts on the SR 37 roadway in the Project area are assumed under existing conditions (i.e., with no projected SLR):

- The levees around Tubbs Island may be exposed to overtopping during a 1-year (or greater) coastal storm event if they are not raised; portions of the impacted levees are near the highway and overtopping may result in flooding of the highway. The likelihood of flooding of the highway increases if the overtopping results in a breach of the levee.

- Approximately 960 feet (0.2 mile) of highway may be exposed to flooding on a frequent basis (i.e., approximately annually or every other year [Attachment K, Figure 7-1]).

- A 10-year storm event, which has a 10 percent chance of occurring each year, would expose approximately 3,680 feet (0.7 mile) of the highway to temporary flooding (Attachment K, Figure 7-2). Frequent flooding would occur at Tolay Creek, and frequent and severe flooding would occur at Mare Island.

- Floods from a 50-year storm event, which has a 2 percent chance of occurring each year, would expose 9,900 feet (1.9 miles) of the highway to temporary flooding (Attachment K, Figure 7-3). Frequent flooding would occur at Tolay Creek, and frequent and severe flooding would occur at Mare Island.

- Floods from a 100-year storm event, which has a 1 percent chance of occurring each year, would expose 14,435 feet (2.7 miles) of the highway to temporary flooding (Attachment K, Figure 7-4). Severe flooding is projected at Tolay Creek, and severe to extreme flooding is projected at Mare Island.

The following flood impacts on the SR 37 roadway in the Project area are assumed under the OPC's projected SLR levels with a 0.5 percent likelihood of SLR conditions to the year 2050 (i.e., 1.9 feet of SLR) on top of the 1-, 10-, 50-, and 100-year storm events. These scenarios are based on the existing roadway design and elevation, with the following identified SLR increase (1.9 feet of SLR):

- Floods from a 1-year storm event, which has a 100 percent chance of occurring each year, with 1.9 feet of SLR, would expose 9,900 feet (1.9 miles) of the highway to temporary flooding (Attachment K, Figure 7-5). Frequent flooding would occur at Tolay Creek, and frequent and severe flooding would occur at Mare Island.

- Floods from a 10-year storm event, which has a 10 percent chance of occurring each year, with 1.9 feet of SLR, would expose 22,125 feet (4.2 miles) of the highway to temporary flooding (Attachment K, Figure 7-6). Severe flooding is projected at Tolay Creek, and severe to extreme flooding is projected at Mare Island.

- Floods from a 50-year storm event, which has a 2 percent chance of occurring each year, with 1.9 feet of SLR, would expose 34,720 feet (6.6 miles) of the highway to temporary flooding (Attachment K, Figure 7-7). Extreme flooding is projected at Mare Island and at Tolay Creek.

Based on the shoreline analysis, the most vulnerable sections of SR 37 in the Project area were identified. Of the highway segments, the areas that are most prone to flooding are:

- A low-lying segment of SR 37 west of the Mare Island interchange
- A low-lying bayfront segment of SR 37 between Tolay Creek and Tubbs Island Trailhead
- The portion of SR 37 along the interior of Tubbs Island that is protected by perimeter levees

These areas are the most low-lying sections of the highway and are the most vulnerable to existing and future flooding from SLR and storm surge. Overtopping of these segments may lead to flooding of the roadway. The segment near the Mare Island interchange first shows overtopping for a 1-year storm; however, flooding along this segment is typically less than what is shown on the maps due to the wide expanse of fronting marsh, channels, and ponded wetland area and the limited duration of high tides. As SLR increases the height and duration of high tides in San Francisco Bay, it is expected that San Francisco Bay waters will more readily propagate landward and inundate the highway more regularly.

The segment between Tolay Creek and the Tubbs Island Trailhead first shows overtopping with a 1-year storm and may be impacted approximately annually or every other year. The amount of overtopping shows how much the water would exceed the elevation of the highway and can be used to assess the severity of flooding for each event.

Although the primary goal of the Project is to relieve traffic congestion, future impacts on the Project related to SLR have been considered. The Project includes several design features that would make it more resilient to flooding from SLR. The following adaptive management measures are being considered to address SLR in the Project:

- Equipment that may be vulnerable to inundation, such as communications and power equipment, would be relocated and placed on raised pads for its protection.
- Corrosion-resistant construction materials would be required, as appropriate, for utility, power-service connections, foundations, and drainage facilities.
- In consideration of planning responses for inundation or emergency events, an Incident Management Plan will be developed in cooperation with a multi-agency team. The plan will include emergency response procedures, alternative transportation communication protocols, response and enforcement, and recovery procedures.
- Small-scale raising of the road elevation for two segments of SR 37 near the Mare Island interchange and between Tolay Creek and the Tubbs Island Trailhead will be evaluated and addressed during the final design phase for the selected alternative.

- Sheet pile walls along the edge of shoulders would address roadway confinement, may help minimize floodwater percolating into the base and subgrade and would reduce seepage into the side slopes of the roadway embankment. In addition, the heights of the sheet pile walls may be increased above finished grade to provide some flood protection.

The segments of the Project alignment that are vulnerable to flooding from SLR are near Tolay Creek and west of Mare Island. The segment of SR 37 in the Project area is not as vulnerable to flooding from SLR as other parts of the corridor to the west. This portion of SR 37 is part of a larger corridor, and SLR planning efforts are being addressed on a broader scale.

Broadband and Advanced Technologies

The proposed improvements for the project will not impact the accommodation of wired broadband facilities, fueling for zero-emission vehicles, or provisions for infrastructure-to-vehicle communications for transitional or fully autonomous vehicles. Withing the project limits Son PM 3.89 to 6.2 falls in the Broadband Middle-Mile Network, and the standalone project, EA 04-1Y840, will be installing the broad band infrastructure within these limits. Currently this project is in the Project Approval and Environmental Document (PA&ED) phase. The milestone for PA&ED is July 2023 and Ready to List (RTL) is June 2024 for this standalone project.

Alternative Delivery Methods

Construction Manager/General Contractor (CMGC) Program will be pursued as an alternative delivery method for this project.

8. FUNDING, PROGRAMMING AND ESTIMATE

Funding

It is anticipated that the Project will be funded through a combination of federal, State, regional, and local funding sources listed below.

The estimated total project funding is $430 million. The current funding plan of January 13, 2023, is as follows:

- $8 million from the Bay Area Toll Authority (BATA) for the PA&ED phase
- $4 million anticipated from SB 170 funds, which are State funds to be allocated through Caltrans Local Assistance/SCTA, with $3 million for the PS&E phase, and $1 million for mitigation.
- $100 million anticipated from SR37 Toll Funds pending CTC approval
- $70 million anticipated from SB 1 Solutions for Congested Corridors Program

- $80 million anticipated from SB 1 Trade Corridors Enhancement Program
- $67.7 million anticipated from SHOPP
    - $50M future SHOPP funds committed for the Preferred Alternative
    - $17.7 million from SHOPP Project EA 04-2Q20U SR 37/121 Intersection Improvements, to be combined with the Project when it is fully funded
- $73.3 million anticipated from other state and federal grants including the USDOT Rural Surface Transportation Program future cycles, federal and state climate adaptation grants (the federal PROTECT Program, and the Local Transportation Infrastructure Climate Adaptation Program), and Regional Measure 3
- $10 million anticipated from other federal grants OBAG3
- $17 million from other State Surface Transportation Program

It has been determined that the Project is eligible for federal aid funding. Federal funding will be sought after the PA&ED phase.

The Project's funding sources for environmental review include Regional Transportation Plan–Long-Range Planning Funds. Additional funding will be pursued during the project development process.

The most-recent RTP/SCS update for the PBA is Plan Bay Area 2050, which MTC recently adopted (on October 21, 2021). SR 37 improvements are included in this plan under two separate line items and are summarized in Table 8-1. The Project is part of the near-term improvements under RTP ID 21-T06-035, along with other corridor projects anticipated to be done before 2035. The Resilient 37 Project is part of the long-term improvements under RTP ID 21-EN01-129, which includes funding to implement adaptation infrastructure along the SR 37 corridor from Novato to Vallejo. The cost includes more than just the Project elements. It also includes estimated operations and maintenance costs.

Table 8-1: Plan Bay Area 2050 Funding for SR 37 Improvements

RTP ID	Title	Scope	Open Period	Cost/Funding (millions, YOE)
21-T06-035	Corridor & Interchange Improvements | SR 37 | Multiple	This program includes funding to implement new HOV lanes between Mare Island and Sears Point and toll infrastructure to collect tolls charged to westbound vehicles and to implement express bus service between Novato and Vallejo (30-minute peak headways) and other transportation demand management strategies, including Park and Ride facilities and bicycle and pedestrian enhancements.	2035	$740

21-EN01-129	Sea Level Rise Adaptation Infrastructure | SR 37	This program includes funding to implement adaptation infrastructure along the SR 37 corridor from Novato to Vallejo. The program includes actions such as the elevation of critical infrastructure.	Various	$5,120

Notes:
HOV = High-Occupancy Vehicle
RTP ID = Regional Transportation Plan identification number
SR = State Route
YOE = Year of Expenditure

Programming

A preliminary Project Cost Estimate for the Preferred Alternative is provided as Attachment E.

It is anticipated that this Project will be funded from federal, State, and local sources.

A summary of the costs for the Preferred Alternative is provided in Table 8-2.

Table 8-2: Summary of Costs for Preferred Alternative

Fund Source	**Fiscal Year Estimate**								
Federal, State, and Local	**Prior**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**Future**	**Total**
Component	**In Thousands of Dollars ($1,000)**								
PA&ED Support	—	2,000	2,000	4,000	—	—	—	—	8,000
PS&E Support	—	—	—	—	20,000		—	—	20,000
Right of Way Support	—	—	—	—	1,000	—	—	—	1,000
Construction Support	—	—	—	—	—	—	44,000	—	44,000
Right of Way	—	—	—	—	—	—	67,000	—	67,000
Construction	—	—	—	—	—	—	290,000	—	290,000
Total	—	**2,000**	**2,000**	**4,000**	**21,000**	—	**401,000**	—	**430,000**

Seismic retrofit of Sonoma Creek Bridge is assumed not required.

Notes:
— = not applicable
PA&ED = Project Approval and Environmental Document
PS&E = Plans, Specifications, and Estimates

The support cost ratio is 22.4% (all support costs/construction capital plus right of way capital costs).

Estimate

A 10-page Project Cost Estimate prepared for the Preferred Alternative is provided as Attachment E. Major construction cost items include the widening of Sonoma Creek Bridge, sheet pile walls, an expanded polystyrene block slope system, hot-mix asphalt, concrete barriers (Type 60MS), and design pollution prevention treatment BMPs.

Table 8-3 summarizes the cost estimate for the construction and support components of the Preferred Alternative. The cost estimate includes a 15% contingency for the PR phase, with 3.2% escalation until mid-year construction.

Table 8-3: Total Project Cost (2022 Dollars)

Items	Preferred Alternative
Roadway	$230,397,000
Structures	$18,862,000
Environmental Compensatory Mitigation	$28,300,000
Right of Way and Utility Relocation	$38,673,000
Total Current Capital Cost	**$316,233,000**
Total Support Cost	$70,976,400
Total Escalated Capital Cost (2025)	$358,750,000
Total Project Cost	**$430,000,000**

The cost estimate was based on EB HOV Commencement Scenario 3 (Begin the EB HOV left lane about 0.6 mile west of SR 121).

Other cost estimate assumptions are listed below:

- A concrete barrier (Type 60MS) will replace the existing median barrier.
- Seismic retrofit of the Sonoma Creek Bridge is not required.
- Noble Road will be signalized.

9. DELIVERY SCHEDULE

Table 9-1 lists the anticipated delivery milestones for the Project, including the milestone dates and the current milestone designations.

Table 9-1: Project Milestones

Project Milestones		Milestone Date	Milestone Designation
PROGRAM PROJECT	M015	12/28/2018	Actual
BEGIN ENVIRONMENTAL	M020	09/07/2019	Actual
NOTICE OF PREPARATION	M030	07/10/2020	Actual
CIRCULATE DED EXTERNALLY	M120	01/13/2022	Actual
PA&ED	M200	12/06/2022	Target
PS&E (65%)	M300	04/29/2024	Target
PS&E (95%)	M377	10/04/2024	Target
DRAFT STRUCTURES PS&E	M378	08/07/2024	Target
PROJECT PS&E	M380	02/12/2025	Target
RIGHT-OF-WAY CERTIFICATION	M410	03/20/2025	Target
READY TO LIST	M460	04/20/2025	Target
HEADQUARTERS ADVERTISE	M480	07/29/2025	Target
CONTRACT AWARD	M495	11/15/2025	Target
APPROVE CONTRACT	M500	12/20/2025	Target
CONTRACT ACCEPTANCE	M600	12/01/2027	Target
END PROJECT	M800	06/01/2029	Target
FINAL PROJECT CLOSEOUT	M900	05/01/2030	Target

Notes:
DED = Draft Environmental Document
DPR = Draft Project Report
M = Milestone
PA&ED = Project Approval and Environmental Document
PS&E = Plans, Specifications and Estimate

10. RISKS

Project risks have been identified and summarized in the Risk Register (see Attachment L). The Risk Register is an assessment of potential risks and Project impacts that may occur in subsequent phases; the Risk Register will be updated throughout the Project development process. In accordance with the Caltrans Risk Management Handbook, a level 3 Risk Register is required for projects with estimated costs greater than $100 million. A quantitative assessment has been prepared for identified risks, and assignment of cost and schedule impacts are based on risk evaluation for this phase of the Project. The main risks are discussed below.

The Project risk register documents a risk of Project costs exceeding the potential funding availability, which would result in approximately 12 months of schedule delay. The recommended mitigations are to apply for Cycle 3 of Senate Bill 1 funding, develop and update the funding plan to identify funding opportunities, provide early coordination with the California Transportation Commission, develop a competitive application for the SB 1 funding, and maintain the PA&ED schedule. Probable cost for this risk is approximately $89.8 million.

Another risk is the proposed lengthening of Tolay Creek Bridge to about 400 feet at the request of the environmental stakeholders and agencies. Should lengthening be accepted, the Project will need to develop a supplemental or a stand-alone Environmental Document. Probable cost for the risk is approximately $23.9 million.

Another risk is approval for tolling the facility by the California Transportation Commission (CTC). The project funding plan includes $74.3 million from toll funds. Should the CTC not approve tolling, the project will have to find another source of funds to backfill the funding gap. The Project team has been working proactively with CTC staff to seek approval. The project is not viable without tolling because it is necessary to mitigate increase in VMT.

Another risk is the ability to toll the facility based on the highway easement being granted by the Navy to the State. A recent title search, that is under evaluation, discovered a document that shows sections of SR 37 as property of the Navy. The State was granted a highway easement from the Navy in 1938 with a description that the highway easement be a free public highway. The project funding plan requires tolling revenue. Should the ability to toll SR 37 be restricted due to the highway easement granted by the Navy, the Project would be required to seek other sources of funds to cover the shortfall of the tolling revenue. This may require also re-evaluating the Environmental Document.

The Project's risks will be updated through the PS&E phase of the Project.

11. EXTERNAL AGENCY COORDINATION

Federal Highway Administration

At this time, the Project is considered a Delegated Project in accordance with the Joint Stewardship and Oversight Agreement between FHWA and Caltrans (signed on May 28, 2015). In the event that the Project estimate becomes a potential major project (>$450 million), the Caltrans Project Manager must notify the assigned FHWA representative to begin conversations to determine FHWA requirements and oversight responsibilities.

The proposed tolling may be subject to additional approvals from the FHWA. Caltrans, FHWA, and MTC have met on several occasions to discuss the proposed project and tolling to determine the potential eligible federal tolling program applicable to the project, approval requirements, and responsibilities of FHWA. Meetings were held on May 13, 2022, June 9, 2022, August 23, 2022, and November 29, 2022. Potential federal tolling programs that may be applicable to the project include Section 129 General Tolling Program, Section 166 HOV/HOT Lanes, and Value Pricing Pilot Program. Subsequent to the November 29 meeting, Caltrans and MTC prepared and submitted a Tolling and Pricing Opportunities Expression of Interest to FHWA on December 13, 2022. It is anticipated that after FHWA's review of the Expression of Interest, agreement will be reached on the appropriate federal tolling program, and FHWA will perform oversight of project development through the prescribed Systems Engineering Analysis process that will be initiated in the PS&E phase as part of Concept of Operations development. Depending on the specific applicable tolling program, formal approval from the FHWA may not be required. If approval is necessary, it

must be obtained prior to the actual implementation of tolling, and is not required at the time of Project Approval and Final Environmental Document.

Other Agencies

The Project requires the following coordination:

- USACE Department of the Army Permit for:
  - Clean Water Act Section 404
  - Rivers and Harbors Act of 1899 Section 10
- US Coast Guard
  - Rivers and Harbors Act of 1899 Section 9
  - Bridge Permit
- California Department of Fish and Wildlife
  - California Fish and Game Code Section 1602 Lake or Streambed Alteration Agreement
  - Section 2081 Incidental Take Permit
  - Acknowledgement that the project involves de minimis use of Section 4(f) properties.
- Regional Water Quality Control Board
  - Clean Water Act Section 401
  - Water Quality Certification
- San Francisco Bay Conservation and Development Commission
  - California Government Code Title 7.2
  - California Public Resources Code Division 19
  - Major Permit, Administrative Permit, or Regionwide Permit
  - Coastal Zone Management Act (Federal consistency)
- Local agencies
  - Cooperative agreements with STA, NVTA, SCTA, and TAM

- Other agreements with STA, NVTA, SCTA, and TAM
- Agreements to define appropriate tolling and maintenance responsibilities, including hours of maintenance activities, lane closures, and potential financial contributions for maintenance activities. Discussions between MTC and Caltrans would be needed.

- Railroads
  - Railroad Agreement with SMART and the California Public Utilities Commission for at-grade or grade-separated crossings

- Other
  - State Historic Preservation Officer: The project has completed Section 106 consultation and concurrence with regard to the National Register of Historic Places determinations of eligibility and effect, and the Section 106 process is complete.
  - Tribal cultural resources: Consultation with Tribes that have requested notification per Assembly Bill 52 and CEQA requirements
  - Regional Water Quality Control Board: Construction Stormwater General Permit compliance
  - US Fish and Wildlife Service: Section 7 of the Endangered Species Act consultation and concurrence in findings. USFWS has provided Caltrans acknowledgement that the project involves de minimis use of Section 4(f) properties.
  - National Marine Fisheries Service: Section 7 of the Endangered Species Act consultation and concurrence in findings
  - Federal Highway Administration: The project has received concurrence that the Project conforms to the SIP in accordance with Title 40 CFR Part 93
  - Interagency Air Quality Conformity Task Force: The project has received concurrence that the Project is not a Project of Air Quality Concern as defined by 40 CFR Section 93.123(b)(1) or 40 CFR Section 93.128 and conforms at the regional level to the Clean Air Act

12. PROJECT REVIEWS

Geometric Reviews

Geometry review meetings were conducted with Caltrans HQ Project Delivery Coordinator, District Design Liaison Caltrans District 4, Caltrans Office of Design Napa and Marin, Caltrans Highway Operations and other functional units between February 2020 and

February 2022. Comments were received and have been incorporated into the current Project geometry drawings.

Other Reviews

Constructability Review: The District 4 Constructability Review reviewed the Draft Project Report on July 21, 2021, and no comments were received. Further Constructability Reviews will be performed at the 65% and 95% stages of the PS&E phase. Comments and recommendations from those reviews will be incorporated into the final PS&E.

Maintenance Review: District 4 Maintenance reviewed the Draft Project Report on July 8, 2021.

District Safety Review: The HSM Analysis Memo was reviewed by Chuong Tran of the Division of Design, Office of Design Support on July 7, 2022.

Traffic Operations Analysis: The Traffic Operations Analysis Report was reviewed by the District 4 Traffic Operations Division and approved on January 6, 2022.

13. PROJECT PERSONNEL

Table 13-1 lists the project personnel by name, title, affiliation, and telephone number.

Table 13-1: Project Personnel

Name	Title	Division /Office	Telephone Number
Kevin Chen	MTC PM	MTC	415-778-5338
Jeanette Weisman	MTC SR 37 Corridor Program Manager	MTC	510-410-4949
Joy Villafranca	AECOM PM/Design Manager	AECOM	510-874-3242
Ramsey Hissen	AECOM Team PM Support	AECOM Team	408-656-9536
Jeff Zimmerman	AECOM Environmental Manager	AECOM	510-874-3005
Ravi Puttagunta	AECOM Team Traffic Operations Manager	AECOM Team	669-242-0172
Lidia Gaitan	Caltrans Project Manager	Caltrans – PPM North	510-715-6949
Ahmed Rahid	Acting Caltrans Regional Project Manager	Caltrans – PPM North	510-407-8422
Cody Ericksen	Environmental Scientist	Office of Environmental Analysis	510- 506-9678
Naga Adibhatla	Caltrans Design Office Chief	Office of Design Napa and Marin	510-407-8413
Chris Caputo	Acting District Division Chief	Office of Environmental Planning and Engineering	510-715-9059
Solomon Tesfe	Caltrans District Design Liaison	Design	510-286-7196
Douglas Wright	Senior Transportation Surveyor	Office of Land Surveys	510-960-0118

Name	Title	Division /Office	Telephone Number
Michael O'Callaghan	Caltrans District Office Chief	Airspace, Utilities, Local Programs and Relocation Assistance	510-529-5881
Aung Maung	Caltrans Division Chief	Office of Traffic Operations	510-714-7889
Patipan (Ben) Mitrsongkroh	Senior Transportation Engineer	Office of Highway Operations	510- 421-6386
Phil Cox	Branch Chief	Caltrans Traffic Forecasting	510-286-5584
Katie Yim	Branch Chief	Office of Traffic Safety	510-286-4578
Bahman Zarechian	Branch Chief	Office of Traffic Safety	510-622-4422
Sergio Ruiz	Complete Streets Coordinator	Caltrans District 4 (Bay Area)	510-622-5773

14. ATTACHMENTS (Number of Pages)

A. Location Map (1)
B. Preliminary Plans (39)
C. Typical Cross Sections (4)
D. Stormwater Data Report Cover (without Attachments) (26)
E. Project Cost Estimate (10)
F. Advance Planning Studies and Design Supplement (84)
G. Right of Way Data Sheet (8) / ROW Requirements Map (13)
H. Final Environmental Impact Report/Environmental Assessment (Signature Pages) (5)
I. Cooperative Agreements
   I-1. Cooperative Agreement No. 04-2623 (27)
   I-2. Draft Cooperative Agreement No. 04-2905 (23)
J. Transportation Management Plan Data Sheet (4)
K. Areas of Flood Impact to Highway (7)
L. Risk Register (6)
M. Toll Gantry Visual Simulations (5)
N. Transit and Rideshare (2)