Faith Home Road and Garner Road Expressway Project

Stanislaus County, California
District 10—Stanislaus County—Faith Home Road

Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment

Prepared by the
State of California, Department of Transportation
and the Stanislaus County Public Works Department

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this Project are being, or have been, carried out by Caltrans pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

May 2021

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General Information about This Document

What's in this document:
The California Department of Transportation (Department), as assigned by the Federal Highway Administration (FHWA), has prepared this Initial Study/Environmental Assessment (IS/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed construction of a two-lane expressway from the existing Faith Home Road and Hatch Road intersection north to the Garner Road and Finch Road intersection (Project) located in Stanislaus County, California. The Department is the lead agency under the National Environmental Policy Act (NEPA). The Stanislaus County Department of Public Works is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the Project is being proposed, what alternatives we have considered for the Project, how the existing environment could be affected by the Project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document.
- Additional copies of this document and the related technical studies, are available for review at the Stanislaus County Department of Public Works (1716 Morgan Road, Modesto). This document may be downloaded at the following website http://www.faithhomeroad.com
- Attend the public hearing.
- We'd like to hear what you think. If you have any comments about the proposed Project, please send your written comments to the Department by the deadline.
- Send comments via postal mail to:
  Environmental Branch Chief, Attention: Dominic Vitali
  California Department of Transportation, District 10
  Division of Planning, Local Assistance, and Environmental
- Send comments via email to: Dominic.Vitali@dot.ca.gov.
- Be sure to send comments by the deadline: 20 June 2021.

What happens next:
After comments are received from the public and reviewing agencies, the Department, as assigned by the FHWA, may: (1) give environmental approval to the proposed Project, (2) do additional environmental studies, or (3) abandon the Project. If the Project is given environmental approval and funding is obtained, the County could design and construct all or part of the Project.

Alternative Formats:
For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Dominic Vitali, 1976 E. Dr. Martin Luther King Jr. Blvd., Stockton, CA 95205; 209-948-7427 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

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SCH# >
10-STA-Stanislaus County Department of Public Works STPL - 5938(240)

Establish a new road connection between Faith Home Road and Garner Road in Stanislaus County immediately adjacent to the City of Modesto and City of Ceres.

INITIAL STUDY with Proposed Mitigated Negative Declaration / Environmental Assessment

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C), 49 USC 303, and/or 23 USC 138

THE STATE OF CALIFORNIA
Department of Transportation
and
Stanislaus County Public Works Department

Responsible Agencies: California Department of Fish and Wildlife, Central Valley Regional Water Quality Control Board, California State Lands Commission
Cooperating Agencies: U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service

_____ _____

Date

Dennis T. Agar
District Director
California Department of Transportation, District 10
NEPA Lead Agency

_____ _____

Date

Chris Brady
Deputy Director, Design Division
Stanislaus County Public Works
CEQA Lead Agency

The following persons may be contacted for more information about this document:

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SCH #

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The Stanislaus County Public Works Department (County), working in cooperation with California Department of Transportation (Department) and the Stanislaus Council of Governments (StanCOG), proposes to construct a two-lane expressway from the existing Faith Home Road and Hatch Road intersection north to the Garner Road and Finch Road intersection. The County is the lead agency under the California Environmental Quality Act (CEQA). The Department is the National Environmental Policy Act (NEPA) lead agency.

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is the County's intent to adopt an MND for this project. This does not mean that the County's decision regarding the project is final. This MND is subject to change based on comments received by interested agencies and the public.

The County has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no impact on: Tribal Cultural Resources, Mineral Resources, Population and Housing, Public Services.

In addition, the proposed project would have less than significant impacts to: Aesthetics, Air Quality, Cultural Resources, Energy, Greenhouse Gases, Hydrology and Water Quality, Land Use and Planning, Noise, Transportation, Utilities/ Service Systems, Wildfire.

With the following mitigation measures incorporated, the proposed project would have less than significant impacts to: Agricultural and Forestry Resources, Biological Resources, Geology and Soils, Hazards and Hazardous Materials, and Recreation.

Mitigation Measures Incorporated

Agricultural and Forestry Resources: Implementation of measure AG-1 reduces impacts to less than significant.

Biological Resources: Implementation of measures BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), BIO-3 (Seasonal Wetland), BIO-4 (Other Special-Status Plants), BIO-5 (Silvery legless lizard), BIO-6 (Western Pond Turtle), BIO-7 (Migratory Birds and Birds of Prey), BIO-8 (Burrowing Owl), BIO-9 (Bats), BIO-10 (Vernal pool Fairy shrimp), BIO-11 (Valley elderberry longhorn beetle), and BIO-12 (Steelhead – California Central Valley) would reduce impacts to less than significant.

Geology and Soils: Implementation of GEO-1 would reduce potential liquefaction and seismic settlement impacts. Implementation of PALEO-1 (Paleontological Mitigation Plan) would reduce potential impacts to less than significant.

Hazards and Hazardous Materials: Implementation of measure HAZ-1 would reduce potential impacts to less than significant.

Recreation: Implementation of REC-1 (protected channel corridor) would reduce potential impacts to recreational boaters using the Tuolumne River in the Project area during construction.

_____ _____

Name Date

Deputy Director

Stanislaus County, Public Works Department

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Table of Contents

CHAPTER 1. PROPOSED PROJECT 1

1.1 INTRODUCTION 1
1.1.1 Location 1
1.1.2 Project History 7
1.1.3 Funding 7
1.2 PURPOSE AND NEED 7
1.2.1 Purpose 7
1.2.2 Need 8
1.3 INDEPENDENT UTILITY AND LOGICAL TERMINI 8
1.3.1 Logical Termini 8
1.3.2 Independent Utility 8
1.4 PROJECT DESCRIPTION 9
1.4.1 Alternatives 9
1.4.2 Drainage and Storm Water Runoff 16
1.4.3 Process Summary 17
1.4.4 Schedule 17
1.4.5 Permits and Approvals Needed 17

CHAPTER 2 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES 19

2.1 TOPICS CONSIDERED BUT DETERMINED NOT TO BE RELEVANT 19
2.2 HUMAN ENVIRONMENT 19
2.2.1 Existing and Future Land Use 19
2.2.2 Consistency with State, Regional, and Local Plans 37
2.2.3 Parks and Recreational Facilities 49
2.2.4 Farmlands 50
2.2.5 Growth 56
2.2.6 Community Impacts 71
2.2.7 Utilities / Emergency Services 82
2.2.8 Traffic and Transportation/ Pedestrian and Bicycle Facilities 85
2.2.9 Visual/ Aesthetics 132
2.2.10 Cultural Resources 139
2.3 PHYSICAL ENVIRONMENT 144
2.3.1 Hydrology and Floodplain 144
2.3.2 Water Quality and Storm Water Runoff 156
2.3.3 Geology/Soils/Seismic/Topography 169
2.3.4 Paleontology 174
2.3.5 Hazardous Waste/ Materials 184
2.3.6 Air Quality 191
2.3.7 Noise 221
2.4 BIOLOGICAL ENVIRONMENT 237
2.4.1 Natural Communities 237
2.4.2 Wetlands and Other Waters 263
2.4.3 Plant Species 267
2.4.4 Animal Species 270
2.4.5 Threatened and Endangered Species 278

2.4.6 Invasive species *299*
2.5 CUMULATIVE IMPACTS 301

CHAPTER 3 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) EVALUATION 308

3.1 DETERMINING SIGNIFICANCE UNDER CEQA 308
3.2 CEQA ENVIRONMENTAL CHECKLIST 308
3.2.1 Aesthetics *309*
3.2.2 Agricultural and Forestry Resources *310*
3.2.3 Air Quality *311*
3.2.4 Biological Resources *312*
3.2.5 Cultural Resources *314*
3.2.6 Tribal Cultural Resources *314*
3.2.7 Energy *315*
3.2.8 Geology and Soils *316*
3.2.9 Greenhouse Gases *318*
3.2.10 Hazards and Hazardous Materials *318*
3.2.11 Hydrology and Water Quality *320*
3.2.12 Land Use and Planning *323*
3.2.13 Mineral Resources *324*
3.2.14 Noise *325*
3.2.15 Population and Housing *326*
3.2.16 Public Services *327*
3.2.17 Recreation *327*
3.2.18 Transportation *328*
3.2.19 Utilities/ Service Systems *331*
3.2.20 Wildfire *333*
3.2.21 Mandatory Findings of Significance *334*
3.3 CLIMATE CHANGE 334
3.3.1 Regulatory Setting *335*
3.3.2 Environmental Setting *339*
3.3.3 Project Analysis *341*

CHAPTER 4 COMMENTS AND COORDINATION 343

4.1 EARLY COORDINATION AND CONSULTATION 343
4.2 CONSULTATION AND COORDINATION WITH PUBLIC AGENCIES AND TRIBAL GOVERNMENTS 344
4.3 PUBLIC PARTICIPATION 346

CHAPTER 5 LIST OF PREPARERS 348

CHAPTER 6 DISTRIBUTION LIST 350

APPENDIX A: TITLE VI POLICY STATEMENT, SIGNED BY THE DIRECTOR 362

APPENDIX B: SUMMARY OF RELOCATION BENEFITS 366

APPENDIX C: AVOIDANCE, MINIMIZATION AND/OR MITIGATION SUMMARY 372

APPENDIX D: COPY OF THE LAND CONSERVATION ACT CONTRACT FOR APN 018-062-002 399

APPENDIX E: FHWA & FTA CALIFORNIA 2021 FSTIP APPROVAL 402

LIST OF TECHNICAL STUDIES 405

List of Figures

Figure 1.1-1. Project Location Map 3
Figure 1.1-2. Aerial Map 5
Figure 2.2-1 Community Impact Assessment Study Area 21
Figure 2.2-2. Preliminary ROW acquisition map 29
Figure 2.2-3. Guidance Figure 5.1 (The First Cut) 60
Figure 2.2-4. Guidance Figure 6.1 (The Analysis) 64
Figure 2.2-5. Comparison of Minority Populations. (Note: The 'White' category is inclusive of the Hispanic population. Per the 2010 U.S. Census the Hispanic/ Latino group represented 41.9 percent of the population of Stanislaus County.) 77
Figure 2.2-6. Percent of People with Income Below the Poverty Level in the Last 12 Months based on 2013-2017 American Community Survey 5-Year Estimates. 79
Figure 2.2-7. Study Area 89
Figure 2.2-8. Aerial view looking south before improvements. 134
Figure 2.2-9. Aerial view looking south after improvements. 134
Figure 2.2-10. Tuolumne River looking northeast before improvements 135
Figure 2.2-11. Rendering from Tuolumne River looking northeast after improvements. 135
Figure 2.2-12. View from above Tuolumne River looking east before improvements. 136
Figure 2.2-13. Rendering of Tuolumne River looking east after Improvements 136
Figure 2.2-14. View from Mitchell Road Bridge looking east after improvements. 137
Figure 2.2-15. View from Santa Fe Road Bridge looking west after improvements. The railroad bridge obstructs the view west. 137
Figure 2.3-1. Tuolumne River Watershed Map at Project Location 147
Figure 2.3-2. FEMA FIRM Overlay 149
Figure 2.3-3. Beard Industrial District Drainage System. 162
Figure 2.3-4. TID System Components 163
Figure 2.3-5. Groundwater Subbasins 165
Figure 2.3-6. Paleontological Sensitivity Map 181
Figure 2.3-7. Noise Levels of Common Activities 223
Figure 2.3-8. Long and Short Term Measurement Locations 227
Figure 2.3-9. Modeled Receiver Locations (North of Hatch Road) 229
Figure 2.3-10. Modeled Receiver Locations (South of Hatch Road) 231
Figure 2.4-1. Project Impact Area Map 239
Figure 2.4-2. Tree Impact Map 251
Figure 3.3-1. 2020 Business as Usual (BAU) Emissions Projection 2014 Edition 340
Figure 3.3-2. Possible Use of Traffic Operation Strategies in Reducing On-Road CO2 Emissions 341

List of Tables

Table 2.2-1. Preliminary ROW acquisition 26
Table 2.2-2. Assessor's Parcels in the Project Area 51
Table 2.2-3. Effects to Resources of Concern 68
Table 2.2-4. Intersection and Freeway LOS Thresholds 86
Table 2.2-5. Roadway LOS Thresholds 87
Table 2.2-6. Project Transportation Analysis Report Study Intersections 88
Table 2.2-7. Project Transportation Analysis Report, Freeway Study Segments 90
Table 2.2-8. Project Transportation Analysis Report, Roadway Study Locations 90
Table 2.2-9. Peak Hour Traffic Count Data Statistics 91
Table 2.2-10. Planned Separate Projects from the 2014 RTP/SCS 92

Table 2.2-11. Completed Projects and Planned Separate Projects from the 2018 RTP/SCS 94
Table 2.2-12. Intersection LOS Thresholds 95
Table 2.2-13. Freeway LOS Thresholds 96
Table 2.2-14. Roadway Segment LOS Thresholds 97
Table 2.2-15. Intersection Operations – Existing (2017) Conditions 99
Table 2.2-16. Freeway Operations – Existing (2017) Conditions 100
Table 2.2-17. Roadway Operations – Existing (2017) Conditions 100
Table 2.2-18. Collison History 102
Table 2.2-19. Predicted Collison Rate 102
Table 2.2-20. Daily Volume at Tuolumne River – Construction Year (2025) Conditions 105
Table 2.2-21. Daily Volume at Tuolumne River – Design Year (2045) Conditions 106
Table 2.2-22. Area-wide Average Daily Performance Measures 107
Table 2.2-23. Intersection Operations – Construction Year Conditions 109
Table 2.2-24. Intersection Operations – Construction Year (2025) Conditions with Mitigation 112
Table 2.2-25. Freeway Operations – Construction Year (2025) Conditions 114
Table 2.2-26. Roadway Operations – Construction Year (2025) Conditions 114
Table 2.2-27. Predicted Annual Collisions – Construction Year (2025) Conditions 116
Table 2.2-28. Intersection Operations – Design Year (2045) Conditions 117
Table 2.2-29. Intersection Operations – Design Year (2045) Conditions with Mitigation 120
Table 2.2-30. Freeway Operations – Design Year (2045) Conditions 122
Table 2.2-31. Roadway Operations – Design Year (2045) Conditions 123
Table 2.2-32. Predicted Annual Collisions – Design Year (2045) Conditions 125
Table 2.2-33. Land Grant Patentees within the Study Area 142
Table 2.3-1. Beneficial Uses of Tuolumne River 151
Table 2.3-2. Summary of Floodplain Elevation, 100-year Storm Event 152
Table 2.3-3. Summary of Floodplain Width, 100-year Storm Event 153
Table 2.3-4. Basin Plan Specific Pesticide Objectives 164
Table 2.3-5. DSA and Existing, New, and Replaced Impervious Areas (in Acres) 166
Table 2.3-6. Preliminary Basin Sizing for Proposed Condition 168
Table 2.3-7. AASHTO and USCS soil classes for Project area 173
Table 2.3-8. Caltrans Paleontological Sensitivity Scale 179
Table 2.3-9. Project Paleontological Sensitivity 180
Table 2.3-10. Summary of Recommendations 186
Table 2.3-11. Table of State and Federal Ambient Air Quality Standard 192
Table 2.3-12. Principal Health and Atmospheric Effects by Pollutant 194
Table 2.3-13. Thresholds of Significance for Criteria Pollutants 196
Table 2.3-14. Air Quality Concentrations for the Past 5 Years 198
Table 2.3-15. State and Federal Attainment Status 201
Table 2.3-16. Construction Emissions and Local Significance Thresholds 203
Table 2.3-17. Projects of Air Quality Concern Explanation 204
Table 2.3-18. 'Transportation Project-Level Carbon Monoxide Protocol' conformity-requirement screening questions 207
Table 2.3-19. 2025 Traffic Data (ADT/Truck ADT) for Project Phases 210
Table 2.3-20. 2045 Traffic Data (ADT/Truck ADT) for Project Phases 211
Table 2.3-21. Intersection Analysis – Year 2025 Conditions 212
Table 2.3-22. Intersection Analysis – Year 2045 Conditions 213
Table 2.3-23. 2025 Phase 1 (2 Lanes) CO Concentrations 214
Table 2.3-24. 2045 Phase 1 (2 Lanes) CO Concentrations 214
Table 2.3-25. Projected VMT for Project Alternatives 217
Table 2.3-26. Noise Abatement Criteria 222
Table 2.3-27 Summary of Modeled Existing Peak Hour Noise Levels 233
Table 2.3-28. Predicted Future Noise Analysis Phase 1 (2 Lanes) 235

Table 2.3-29. Predicted Future Noise Analysis Phase 2 (4 Lanes) 236
Table 2.3-30. Construction Equipment Noise 237
Table 2.4-1. Project Impacts to Biological Communities 249
Table 2.4-2. Estimated Native Tree Impacts in the Project area 249
Table 2.4-3. Summary of Features. 265
Table 2.4-4. Special -Status Plant Species 268
Table 2.4-5. Special-Status Animal Species 271
Table 2.4-6. Threatened and Endangered Species 279
Table 2.4-7. Elderberry Shrub Table 284
Table 2.4-8. Pile driving activity details for the proposed bridge over the Tuolumne River 287
Table 2.4-9. Results of Hydroacoustic Effects Analysis 288
Table 3.2-1. Summary – Design Year (2045) Conditions 329
Table 3.3-1. Estimated Operational CO2 Emissions (tons/year). 342
Table 3.3-2. Estimated Construction CO2 Emissions (tons/construction project) 343

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Chapter 1. Proposed Project

1.1 Introduction

The Stanislaus County Public Works Department (County), working in cooperation with California Department of Transportation (Department) and the Stanislaus Council of Governments (StanCOG), proposes to construct a two-lane expressway from the existing Faith Home Road and Hatch Road intersection north to the Garner Road and Finch Road intersection. The proposed Project would improve circulation between existing State Route (SR) 132 and SR 99. Figures 1.1-1 and 1.1-2 show the Project vicinity and location. The County is the lead agency under the California Environmental Quality Act (CEQA). The Department is the National Environmental Policy Act (NEPA) lead agency.

The proposed Project is the phased construction of a four-lane expressway. The approximately one-mile long Project would be completed in two phases. Phase 1 would construct an approximately one-mile long, two-lane road facility from the intersection of Garner Road and Finch Road, south to the intersection of Hatch Road and Faith Home Road. Phase 1 includes a new Tuolumne River bridge crossing and intersection improvements at Faith Home Road and Hatch Road and Garner Road and Finch Road. Phase 2 would include the expansion to a full four-lane expressway facility. The environmental analysis and documentation for the Project evaluates all components (e.g. ROW, biological impacts, and land use impacts) needed to complete both Phase 1 (two-lane facility) and Phase 2 (four-lane expressway). Construction of Phase 1 of the Project is anticipated to begin in 2023 and be completed in 2025. The full four-lane expressway facility (Phase 2) would be constructed in the future. Once funding is secured, the County will complete environmental review of Phase 2 and schedule the construction of the Phase 2 improvements. The new expressway would provide an additional, much needed, local connection between Ceres and Modesto in Stanislaus County.

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 USC 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6, 2012, amended 23 USC 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a Memorandum of Understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012, and was renewed on December 23, 2016, for a term of five years. In summary, the Department continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and the Department assumed all of the United States Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

1.1.1 Location

The Project is located in central Stanislaus County between the Cities of Modesto and Ceres. The north end of the Project occurs on farmland and terminates in the Beard Industrial Park. The Modesto and Empire Traction Company (M&ET) short line railroad also occurs in the northern portion of the Project area. The Tuolumne River flows east to west through the Project area. The Ceres Main Canal Bridge occurs south of the Tuolumne River in the southern portion

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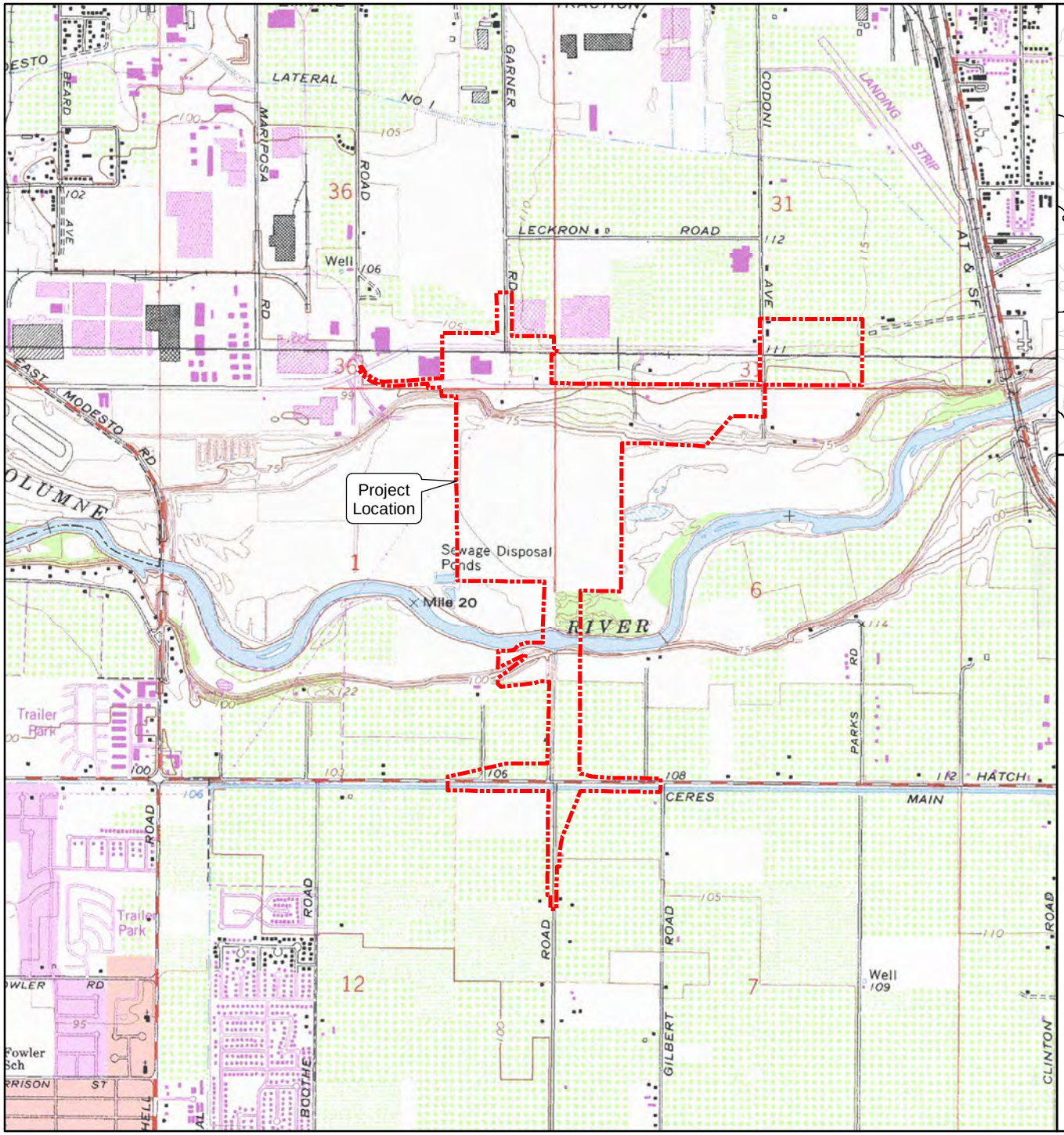

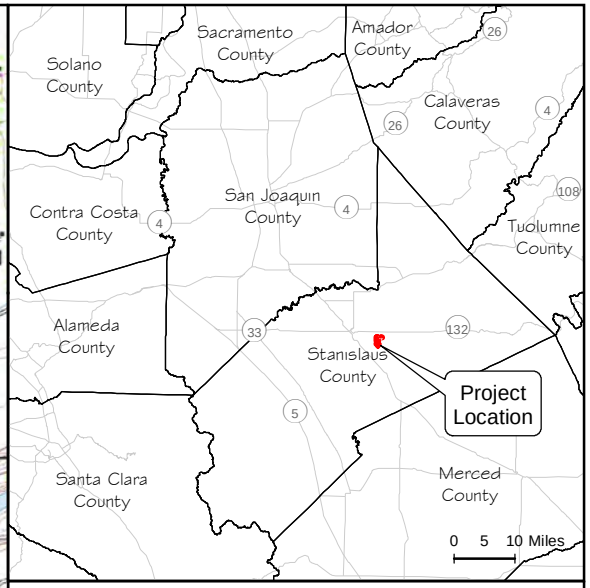

Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
7 July 2020

Figure 1.1-1. Location Map

Project Location

2,000 1,000 0 2,000 Feet

N

Scale: 1 inch = 2,000 feet

USGS Quadrangle: Ceres, CA (Revised 1987) &
Ceres, CA (Revised 1987), o_sw0201.sid
7.5 Minute (C) Series, Albers Nad83 Mosaics (MrSID),
CASIL California USGS Digital Raster Graphics (DRG)

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Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
7 July 2020

Project Location

Figure 1.1-2. Aerial Photograph

Aerial Photograph: 11 September 2018
GEO1 Vivid Maxar Imagery
ESRI Arcmap Imagery Basemap layer

15089 FaithHomeRd_GarnerRdExpressway_Fig1_1-2AerialPhoto.mxd

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of the Project area. The southern terminus of the Project is approximately 1,500 feet south of East Hatch Road.

1.1.2 Project History

For over three decades, Stanislaus County and the Cities of Modesto and Ceres have planned for closing the gap between Faith Home Road and Garner Road and bridging the Tuolumne River. The Stanislaus Council of Governments (StanCOG) 2010 Regional Expressway Study Update of the 1990 Stanislaus County Regional Expressway Study identified Claus Road and Garner Road and Faith Home Road as a north/south corridor expressway.

The proposed Project would improve circulation between existing SR 132 and SR 99. Existing SR 132 is part of the regional expressway system and is the main east-west corridor in Stanislaus County. SR 99 is a 6-lane freeway facility in Stanislaus County, and connects the largest urban areas in the County to other metropolitan areas in the San Joaquin Valley. The Cities of Modesto, Turlock, and Ceres along with the unincorporated communities of Keyes and Salida are located on the SR-99 corridor. These cities and communities account for approximately two-thirds of the County's total population. SR 132 provides an interregional connection between Interstate 5 near the City of Tracy to the west and SR 99 in Modesto to the east. The existing SR 132 is the only east-west highway with access across the Tuolumne, San Joaquin, and Stanislaus rivers from Modesto. As such, SR 132 has increasingly served the San Joaquin Valley and has become a major truck route between Interstate 5 and SR 99.

1.1.3 Funding

The proposed Project is included in the 2021Federal Transportation Improvement Program (FTIP, project identification number RSTPSC01 and 21400000695), and the fiscally constrained 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS project identification numbers SC78 and C14 for the signalization of Faith Home Road and Hatch Road intersection). Project funding is based on a combination of local, state, and federal sources. The Project is estimated to cost approximately $71.7 million as per the Stanislaus County 2021 FTIP. Measure L would partially fund the Project (initial 25 percent funded). Additional funding sources would be evaluated and pursued as opportunities become available.

1.2 Purpose and Need

The proposed Project is needed to alleviate traffic congestion on major local roads (e.g. SR 99, SR 132, and Mitchell Road) and increase the efficiency of the regional and interregional transportation network by constructing an approximately one-mile new road connecting Faith Home Road to Garner Road including a new Tuolumne River Crossing.

1.2.1 Purpose

The purpose of the proposed Project is to:

- Close a regional transportation gap between SR 132 and SR 99, and between the Cities of Modesto and Ceres, by constructing an approximately one-mile new road connecting Faith Home Road to Garner Road. The new road would bridge over the Tuolumne River above the Q200 flood event elevation (a flood event that has a 1 in 200 chance (0.5% probability) of being equaled or exceeded in any given year) to provide an all-weather roadway that maintains emergency vehicle services and goods movement in the region;

- Create an efficient Freight Goods Movement Corridor.

1.2.2 Need

The need of the proposed Project is to:

- Correct an existing regional transportation gap between SR 132 and SR 99. This mile-long roadway gap results in inefficient traffic operations between SR 132 and SR 99.
- Relieve traffic congestion and improve intraregional and interregional operations and circulation. The existing roadway network was not planned to accommodate the amount of growth that has occurred in recent years, nor growth projected to occur in the future. Increasing congestion on SR 99 and local road thoroughfares such as Mitchell Road and SR-132, along with the lack of a parallel system to SR-99, is anticipated to increase the delay for the movement of vital goods and products into and out of the region. Data regarding this can be found in Sections 2.2.8.2 (Affected Environment) and 2.2.8.3 (Environmental Consequences) of Chapter 2.2.8 (Traffic and Transportation) below.

1.3 Independent Utility and Logical Termini

Federal Highway Administration regulations (23 Code of Federal Regulations 771.111 [f]) require that a proposed Project:

- Have a rational beginning and ending point (i.e., logical termini) and be of sufficient length to address environmental matters on a broad scope.
- Be a functional and reasonable expenditure even if no additional transportation improvements are made in the area (i.e., independent utility).
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

1.3.1 Logical Termini

The Project would construct a road connection between Finch Road at the north and East Hatch Road at the south. Currently, no road occurs between these two points. Therefore, Finch Road and East Hatch Road are the logical termini.

1.3.2 Independent Utility

The Stanislaus Council of Governments (StanCOG) 2010 Regional Expressway Study Update identified Claus Road and Garner Road and Faith Home Road as a north/south corridor expressway comprising three segments. The first segment is the “Claus Road expressway” from Claribel Road to Briggsmore Avenue. The second segment extends from Briggsmore Avenue to Hatch Road. The third segment, “Faith Home Road expressway”, is planned as a four-lane expressway in the County’s General Plan from Hatch Road to Keyes Road. The general plans of the Cities of Modesto and Ceres plan for the construction of an expressway and new Tuolumne River crossing along the Claus Road, Garner Road, and Faith Home Road corridors from north Modesto to Keyes Road in the Keyes area. Construction of the Project between Finch Road at the north and East Hatch Road at the south would be a functional and reasonable expenditure even if no additional improvements were made along the Claus Road and Garner Road and Faith Home Road corridor since it would provide improved traffic circulation. Construction of the Project between Finch Road at the north and East Hatch Road

at the south would not restrict consideration of any of the other Faith Home Road Expressway segments discussed above.

1.4 Project Description

This section describes the proposed action, project phasing, and the build alternative developed to meet the proposed Project's purpose and need and to avoid or minimize environmental impacts. The Project proposes the phased construction of an approximately one-mile long, four-lane expressway from the existing Faith Home Road and Hatch Road intersection north to the Garner Road and Finch Road intersection. Initially, a two-lane expressway would be constructed under Phase 1. In the future, Phase 2 will expand the approximately one-mile long expressway to four lanes. The proposed Project would improve circulation between existing State Route (SR) 132 and SR 99.

1.4.1 Alternatives

The alternatives under evaluation are the No-Build Alternative and the build alternative. The Project considered an additional alternative which would place the "S-curve" in the expressway north of the Tuolumne River. This alternative was evaluated to determine if it resulted in a better alignment of the new bridge over the Tuolumne River. The alternative S-curve location would require the bridge to cross the Tuolumne River at a skewed angle resulting in a longer bridge structure and increased impacts to the river and the adjacent riparian community. Thus, this alternative did not provide an improved alignment for the new Tuolumne River bridge and was eliminated from further consideration.

Two additional alternatives for crossing the existing and future M&ET tracks were evaluated. The advantages and disadvantages of the overhead grade separation alternative and the at-grade crossing alternative crossings are described in section 1.4.1.3 below. Ultimately both alternatives were rejected for various reasons including the spatial incompatibility of the overhead grade separation alternative and the frequency and unpredictable train movements on the M&ET tracks. See section 1.4.1.3 below for more information.

1.4.1.1 No-Build Alternative

Under the No-Build Alternative the existing regional transportation gap between SR 132 and SR 99 would remain. Existing traffic congestion would continue to worsen on SR 99 and local road thoroughfares such as Mitchell Road and SR 132. The increasing congestion would likely increase delays in the movement of goods and products into and out of the region. Intraregional and interregional operations and circulation within Stanislaus County and the Cities of Modesto and Ceres would not be improved. The No Build Alternative serves as the baseline against which to evaluate the effects of the Build Alternative.

1.4.1.2 Build Alternative

The proposed build alternative is the phased construction of an approximately one-mile long, four-lane expressway from the existing Faith Home Road and Hatch Road intersection north to the Garner Road and Finch Road intersection. Initially, a two-lane expressway would be constructed under Phase 1. The proposed future widening to a four-lane roadway would be a separate project under Phase 2. The County is currently in the process of exploring funding for the Phase 1 of the Project. The future improvements to a four-lane facility are funding dependent and need driven. Once funding is secured, the County will complete environmental

review of Phase 2 and schedule the construction of the Phase 2 improvements. The proposed build alternative is described below in sections 1.4.1.2.1 to 1.4.5.

1.4.1.2.1 Expressway and Alignment

Phase 1 of the Project would construct a new two-lane expressway and bridge over the Tuolumne River between Modesto and Ceres that can be widened to four lanes in the future (Phase 2). The proposed expressway is roughly one mile long. To increase safety, a concrete median safety barrier is proposed for the route to create a divided expressway.

The Faith Home Road and Hatch Road intersection at the southern Project limits and the Garner Road and Finch Road intersection at the northern Project limits are fixed points to which the new expressway would connect. The intersections are not directly north/south of one another; Faith Home Road is approximately 650 feet east of Garner Road. A reverse "S-curve" alignment would allow the new expressway to align with the existing intersections. The S-curve would be located north of the Tuolumne River, over the floodplain.

The preferred alignment would shift the Faith Home Road and Hatch Road intersection slightly to the east. The expressway would head north from Hatch Road, staying on the east side of the Turlock Irrigation District's (TID) Spill ditch to the Tuolumne River. The proposed new Tuolumne River bridge would cross the river at a perpendicular angle, accommodating the shortest possible bridge length. After crossing the river, the bridge would transition to shorter bridge spans and more shallow structure depths over the floodplain. On the north side of the river, the expressway would cross through a 500 feet wide swath of riparian forest before crossing over irrigated agricultural fields and landing on a new peninsula berm.

The Faith Home Road and Hatch Road and the Garner Road and Finch Road intersections are on the high ground on bluffs on the south and north sides of the Tuolumne River floodplain. The vertical alignment of the expressway would be at grade on the southern end at Hatch Road and would drop down as it crosses the Tuolumne River and floodplain. The alignment would go below the railroad tracks before coming up to meet the Garner Road and Finch Road intersection at grade. The vertical alignment of the expressway is discussed in detail in the following railroad undercrossing section.

1.4.1.2.2 Faith Home Road and Hatch Road Intersection to Tuolumne River

The Project would require improvements to the Faith Home Road and Hatch Road intersection. This section of the expressway would be at or near grade. The alignment crosses through existing orchards. The current northern terminus of Faith Home Road is a "T" intersection with East Hatch Road. Faith Home Road is a paved, two-lane road south of Hatch Road. Between Hatch and East Whitmore roads, portions of Faith Home Road have been widened to 40 feet on the west side of the two-lane road and paved in anticipation of a future widening to an ultimate four-lane roadway. In 2011, Stanislaus County added a continuous left turn median to Hatch Road from Faith Home Road to east of the Clinton Road Intersection, which widened Hatch Road to the north.

The TID Ceres Main Canal flows in a concrete lined channel on the south side of Hatch Road. It flows under Faith Home Road through a two-span bridge. The TID Faith Home Spill ditch control structure is located immediately west of the bridge in the north bank of the canal. The

control structure has both automatic and manual controls that allow high flows in the Ceres Main Canal to be directed into the spill ditch and return to the Tuolumne River. Though prior intersection improvements affected portions of the original control structure, the structure remains in operation. The automatic control structure allows the spillway to be in continuous use, as needed. Peak times are during winter storms and during the irrigation season.

The spill ditch is approximately 1,620 feet long from the culvert headwall on the north side of Hatch Road to the top of the river bluff. An underground irrigation supply lateral crosses over the spill ditch via a flume approximately 1,300 feet north of Hatch Road. The irrigation supply lateral pipe is likely an unreinforced concrete pipe east of the spillway. It would be replaced with a reinforced concrete pipe under the expressway. TID has a dirt or gravel access road on both sides of the spill ditch. The access roads are necessary for maintenance of the spillway, and the westerly road provides access to the TID Ceres Remote office and emergency dirt stockpile located on the parcel.

Faith Home Road crosses over the Ceres Main Canal via a bridge just south of the Faith Home Road and Hatch Road Intersection. The proposed Project would construct a new cast in place, pre-stressed, concrete slab bridge. The new canal bridge will be wider than the existing canal bridge and located east and upstream of the existing bridge. The existing Ceres Main Canal bridge would be left in place; it may be relinquished to the Turlock Irrigation District, as it would no longer convey traffic onto Faith Home Road. The shift of the new bridge to the east avoids the Ceres Main Canal gate control system for the Faith Home Spill ditch on the west side of the existing bridge. The new Faith Home Road and Hatch Road intersection would be signalized. South of the intersection, Faith Home Road would conform to the existing two-lane road, via a short S-curve.

1.4.1.2.3 Tuolumne River Bridge

A new main river bridge frame would cross the Tuolumne River. The main river bridge would begin on the south bluff of the river and head north. The main bridge frame is proposed to be a five-span, 861-foot long Cast-in-Place (CIP) Post-Tensioned Concrete Box Girder bridge. The total length of the new bridge and floodplain structures is 1,823 feet and is composed of the 861-foot-long main bridge frame, 450-foot-long causeway box girder bridge, and the 512-foot-long causeway slab bridge. To achieve an economical 210-foot length of the three center spans, a haunched soffit (arch like shape along the bottom of the bridge) would be utilized to reduce the structure depth at mid-span and minimize loads on the supporting piers.

To minimize future widening costs, the piers being proposed for the main bridge frame over the river and continuing frame over the north floodplain would be designed to support the initial two-lane bridge as well as the future widening to the ultimate four-lane bridge.

Each pier of the main river frame would utilize two cast-in-drilled-hole (CIDH) columns. The CIDH piles for the pier at the north bank would be located outside of the Tuolumne River ordinary high water mark (OHWM). The two CIDH piles for the pier along the south side of the main river channel would be placed within the OHWM. No permanent bridge foundations would be placed within the ordinary low water mark (OLWM) of the Tuolumne River. The CIDH piles for both the north and south piers would be constructed within a permanent or temporary casing and dewatering of these cased CIDH piles is anticipated.

Accelerated construction of all CIDH pile foundations and supporting columns for the new Tuolumne River bridge crossing are intended to occur in the first year of construction. The CIDH piles would be installed using typical crawler cranes positioned on either work trestle using an auger drill. Multiple cranes may be needed to facilitate the construction of CIDH piles installed below the ground water table or within the OHWM of the river.

The south end of the main river bridge would be supported by a seat abutment. The abutments at the top of the bank would be out of the river channel and would be founded on driven 14-inch steel "H" piles and installed with a Delmag 30-32 impact hammer, or equivalent. Pile installation would require 25 to 30 strikes per pile. It is anticipated that twenty-two piles per abutment would be installed to a 100- to 115-foot depth at a rate of 7 to 9 piles per day for 14 to 20 days.

Construction of this bridge requires extensive falsework across the river and a parallel temporary work trestle. The temporary work trestle and falsework would be designed to allow upstream and downstream passage of boats. The temporary work trestles would likely extend from the north bank across the river, terminating near the south bank (but without direct access to the south bank). Access on the south bank is challenging due to the steepness of the south river bluff and the height difference between the top of bank and the ordinary high water level of the river. It may be required to continue the temporary work trestle from the south end by turning 90 degrees and running along the south bluff toward the floodplain bench west and downstream of the new bridge. This would run below the spillway. Because the spillway water releases are automatic and uncontrolled, a work trestle along the south bluff would have logistical challenges, but its impacts are worthy of evaluation as part of this study. Temporary trestle foundations and secured trestle decking and falsework supports are proposed to stay in-place between the 2-year construction period.

The temporary work trestles and falsework supports constructed within the OHWM and OLWM would use 14-inch steel "H" piles driven into the streambed by a vibratory hammer. Fifteen bents (the girder across the top of the piers) spaced a minimum of 20 feet apart would support the falsework and temporary trestle. Bent piles would be spaced no more than 12.5 feet apart on center. The piles would support a steel bent cap, with steel stringers and timber decking over the trestle portion. As each span of temporary trestle is erected, the track crane would advance the next span one at a time.

Nine piles per falsework/trestle bent, a total of 135 piles, would be installed at a rate of 10 to 12 piles per day to a 60-foot depth. Installation of each pile would last approximately 10 minutes, and would occur over a span of 15 to 20 days. The piles would require a load restrike test performed with an impact hammer to validate the load capacity approximately 24 hours after the piles have set. A minimum of two piles installed in the river channel would be tested using a minimum of 20 strikes to each pile.

The temporary trestle piles would be removed post-construction using a vibratory extractor. Twenty to 30 piles per day would be removed at a rate of approximately five minutes per pile over the course of two to three days. If a pile is damaged (bent or mushroomed at the tip), removal may take up to several hours.

1.4.1.2.4 Floodplain Structures

North of the main river bridge frame, two additional causeway bridge frames would be constructed that continue over the Tuolumne River floodplain and existing farmland. Continuing

north from the main river bridge frame, the causeway box girder frame would require less structure depth than the main river bridge. The causeway box girder is proposed to be a conventional four span 450-foot long CIP post-tensioned concrete box girder bridge type utilizing three 120-foot spans with a 90-foot end span. Each pier would utilize two columns, each on a large diameter cast-in-drilled-hole (CIDH) pile constructed within a permanent or temporary casing. A shallower causeway slab bridge frame would connect to the causeway box girder frame and continue north, ending on a peninsula berm that extends approximately 1,500 feet south of the north bluff. The causeway slab bridge is proposed to be a six span 512-foot long CIP prestressed slab bridge utilizing 93-foot long interior spans and 70-foot long end spans. To maximize the span length and minimize the number of supports, a haunched soffit slab is proposed. Each pier support would utilize eight columns, each on a small diameter CIDH pile constructed within a temporary casing. The shared bents supporting different frames would be designed to accommodate the structure depth differences. The causeway and the peninsula berm would convey traffic over the Tuolumne River Q200 elevation floodplain, which is a flood event that has a 1 in 200 chance (0.5% probability) of being equaled or exceeded in any given year, to the bluffs on the north side of the river. All causeway bridge foundations would be outside the main river channel and would utilize CIDH pile foundations using permanent or temporary casings. No cofferdams would be required, but pile casings for the causeway box girder frame near the river may require de-watering during construction.

Hydraulic analysis was used to determine the opening/flow capacity for the bridge over the Tuolumne River, the length of the elevated causeway structure over the floodplain, and the length of the peninsula berm. The crown elevation of the embankment would be above the Q200 flood elevation and would protect the road and railroad overcrossing from a Q200 flood event. The fill and structures would not result in an increase of the water surface elevation of more than one foot.

The Project would require approximately 160,000 cubic yards of borrow material to construct the peninsula berm and the railroad improvements. It is possible that the borrow material could come from the northern bluff between the new road alignment and the railroad switch yard south of Codoni Road. At the field northeast of the Finch/Codoni road intersection, there is a secondary borrow site that could be utilized to store imported material if needed. The agricultural fields in the floodplain are another possible source of borrow. The use of the agricultural fields for borrow is unlikely as the property owner does not want to change agricultural activities beyond those affected by the road itself.

A drain pipe would be needed on the both sides of the peninsula embankment to drain accumulated storm runoff collected in the depressed section of Faith Home Road below the proposed Undercrossing. The storm water runoff would be primarily captured and percolated within the adjacent bioswales and ditches. Remaining incidental runoff would be treated via bioswales before heading towards the Tuolumne River. The overland release to the River may be conveyed through a rock lined ditch. Approximately 170 cubic yards of rock slope protection (RSP) are proposed below the OHWM, at the bioswale outfall drains along the north bank of the river. A culvert system may be used to discharge the runoff onto the river bank.

1.4.1.2.5 Railroad Undercrossing

The Project would construct a railroad undercrossing under the M&ET Railroad lines. There is currently one M&ET Railroad line with siding spurs in the Faith Home Road alignment. To

accommodate the future expansion of the railyard, the railroad tracks would be shifted approximately 15 feet south. The tracks would be raised approximately 7 feet from their current elevation to provide proper clearance over the proposed road alignment. Raising the railroad track would begin east of Finch Road and continue to the existing switching yard to the east of the proposed new railroad undercrossing.

M&ET has begun planning for a rail yard expansion which includes over 6 miles of additional track south of Finch Raod. The expansion would include up to three additional tracks south of the existing track including another maintenance road along the entire length of the southernmost track. The existing track would be used as an industry lead track servicing the existing railroad customers; the first new track would be the mainline track, and the other tracks would be a receiving and departure (R&D) track. The R&D track would be used to store unit grain trains approximately 1.5-miles long.

The Project would allow for M&ET's ability to expand the existing yard tracks in the future by providing an approximate 110-foot wide bridge. The railroad undercrossing bridge is proposed to be a 95-foot long, two span, precast girder structure. It would be constructed by first building the structure on top of the existing bluff, then completing the excavation below the bridge to construct Faith Home Road. The Faith Home Road undercrossing would require staged construction to keep one track operational during and maintain railroad traffic during construction. The bridge would accommodate four tracks and two railroad maintenance roads on top, and four lanes of Faith Home Road traffic underneath. The shift of the tracks south requires a new retaining wall to accommodate the shifted track alignment and a new maintenance road adjacent to the Gilton Solid Waste property.

1.4.1.2.6 Garner/Finch Road Intersection

Faith Home Road comes up to the existing Garner Road and Finch Road intersection approximately at existing grade. The intersection would be signalized. Improvements to Garner Road and Finch Road include driveway access modifications, storm drain modifications, overhead utility line relocations, and the addition of new through and turn lanes. The storm drain system in the intersection would be modified to accommodate the railroad undercrossing structure. Design would accommodate truck bays and driveways or consolidate as needed on Garner Road and on Finch Road.

1.4.1.3 Alternatives Considered but Eliminated from Further Consideration

The Project considered an alternative location for the S-curve north of the Tuolumne River. The alternative location was evaluated to determine if it resulted in a better alignment of the new bridge over the Tuolumne River. The alternative s-curve location did not provide an improved alignment for the new Tuolumne River bridge and was eliminated from further consideration.

Two additional alternatives for crossing the existing and future M&ET tracks were evaluated. The advantages and disadvantages of each are discussed below.

Overhead Grade Separation

Advantages:

- This alternative would completely clear existing rail track and proposed future spur tracks.
- Minimizes environmental impacts through the floodplain.

Disadvantages:

- The vertical clearance required over the track(s) requires a lengthy approach from the north, which can only be accomplished by extending the elevated roadway (bridge and lengthy MSE walls and approach embankment well beyond the Finch Road intersection.
- This would require either eliminating turn movements from Finch Road to Garner Road or acquiring additional right of way to squeeze in access ramps.
- Also, of concern would be maintaining full use of the truck bays accessed from Garner Road.
- Due to the elevation change required to get over the tracks then down to the Tuolumne River floodplain, the profile change would be too steep and not meet design standards for this type of a roadway.
- The proposed elevated viaduct structure would need to be approximately 0.75 mile in length extending across the entire floodplain from the north bank to the south bank which would be cost prohibitive.
- Concern with required vertical clearance to overhead 230kv power lines.
- An interchange is required at the Finch Road and Garner Road intersection.
- Impacts the Wisconsin Express Lines (WEL) Companies operations along Garner Road.

This alternative was dismissed due to the disadvantages listed above.

At-Grade Crossing

Advantages:

- Lowest construction cost and eliminates conflict with overhead 230 kv power lines and poles.

Disadvantages:

- Beard Land intends to extend their railyard to the east and south of Finch Road with two additional spur tracks. Multiple, closely spaced, at-grade crossings are not desirable due to safety of vehicles becoming “trapped” between the two crossings.
- In addition, the Beard Group has indicated a plan to store train cars, up to 1.5 miles in length, for a week at a time, on these tracks.
- M&ET trains travel at speeds of 5 to 20 mph which can take up to 20 minutes to clear an at-grade crossing, making an at-grade M&ET crossing for the future crossing south of Finch Road infeasible.

This alternative was dismissed due the frequency and unpredictable train movements associated with it.

1.4.2 Drainage and Storm Water Runoff

According to section 4.18 of the County's 2014 Standards and Specifications (Standards), new developments that create or replace more than 5,000 square feet of impervious surface area shall be considered a "Regulated Project" and shall be subject to water quality treatment requirements. The Project would be required to treat storm runoff from the entire Project, because the Project would increase the existing impervious surface area by more than 50 percent. According to the Standards, projects that replace one acre or more of impervious surface area shall be required to limit post-project runoff to the estimated pre-project runoff for the 2-year and 24-hour storm design event.

Existing drainage structures present include the roadway swales near the intersection of Faith Home Road and East Hatch Road and also the roadway drainage near the intersection of Garner Road and Finch Road. At both of these locations, the roadway slopes would change to support the revised vertical alignment. As a result, most of the roadway drainage at these two intersections would need to be revised. In addition, the agricultural fields below the northern bluff contain irrigation canals or pipelines. One or more of these may need to be rerouted around or through the proposed viaduct to the north side of the Tuolumne River.

The existing drainage line that extends south from Garner Road and Finch Road (Outfall 3) is not compatible with the proposed improvements and would be redesigned. Furthermore, the existing 18-in. line that runs from east-to-west near the M&ET railroad would need to be realigned in the vicinity of Garner Road to accommodate the proposed expressway

The Project proposes to accommodate surface drainage conveyance and disposal primarily through roadside ditches and/or bioswales, culverts, combination infiltration/detention basins, and a pump station. These structures are described below.

Roadside Ditches: Where space permits, percolation, roadside ditches, and bioswales are the preferred means of stormwater conveyance for the Project. A series of ditches or bioswales is proposed along the base of the viaduct and also from the south end of the new Tuolumne River to the intersection of Faith Home Road and East Hatch Road.

Culverts: Culverts are proposed at locations where ditches are inconvenient or space is constrained. For instance, culverts are proposed at the intersections on the north and south ends of the Project. Culverts are also proposed in the vicinity of the railroad undercrossing and would be utilized on the peninsula to convey water downslope to the swales.

Combination Basins: The Project is subject to hydromodification requirements, which would limit the post-Project runoff to the estimated pre-Project 2-year, 24-hour storm event. Hydromodification requirements are typically met by detaining and/or retaining runoff in basins. Soil conditions in the Project area are favorable for the use of combined infiltration/detention basins.

Near the future railroad undercrossing, the proposed roadway alignment has a sag, which would not drain by gravity without special treatment. To drain this low point while simultaneously meeting hydromodification requirements, two 0.92 acre-feet combination infiltration/detention basins are proposed at the floodplain elevation below the proposed roadway and on either side of the sag vicinity. The basins would be designed to gravity drain under low-tailwater (or downstream) water surface elevation conditions, with outlets to ditches and/or swales along the

base of the viaduct leading to the River. Flap gates would be installed at the ends of the outlets to prevent backwater from entering the basins under high tailwater water surface elevation conditions. To drain the basins with the flap gates shut, a pump station designed for the 50-year storm pumping rate would be placed inside the western basin since the topography of the floodplain generally slopes from east to west, and it would be rated with sufficient maximum head to pump against the 200-year flood elevation over the protective roadway berm. The dual basin system would also provide hydromodification benefits by detaining flows and mitigating the increased peak discharges resulting from other added impervious areas.

1.4.3 Process Summary

After the public circulation period, all comments will be considered, and the Department and County will select a preferred alternative and make the final determination of the project's effect on the environment. Under the California Environmental Quality Act (CEQA), if no unmitigable significant adverse impacts are identified, the County will prepare a Negative Declaration (ND) or Mitigated ND.

Similarly, if the Department, as assigned by the Federal Highway Administration (FHWA), determines the National Environmental Policy Act (NEPA) action does not significantly impact the environment, the Department will issue a Finding of No Significant Impact (FONSI).

1.4.4 Schedule

Construction of Phase 1 of the Project is anticipated to begin in 2023 and be completed in 2025. In the first year of construction the Project intends to accomplish all work in the M&ET right of way, retaining wall construction in the Gilton right-of-way, main Tuolumne River Bridge work trestle and all foundations and columns, peninsula fill extending out from the north bluff, power pole relocations, and the new Ceres/TID Main Canal bridge. In the second year of construction the Project intends to complete the main Tuolumne River bridge abutments, falsework and superstructure, excavation below grade separation including retaining walls and concrete boat pavement section, all roadway pavement, drainage, barrier, rails and fences, all roadway signs, signals and striping, and removal of the Tuolumne River work trestle and falsework. The Project would result in a complete two-lane facility. The improvements to a four-lane facility are funding dependent and are not currently scheduled. The full four-lane expressway facility (Phase 2) would be constructed in the future. Once funding is secured, the County will complete environmental review of Phase 2 and schedule the construction of the Phase 2 improvements.

1.4.5 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications (PLACs) are be required for Project construction:

Agency	PLAC	Status
California Department of Fish and Wildlife (CDFW)	1602 Lake and Streambed Alteration Agreement (LSAA)	Application for 1602 LSAA expected after Final ED approval.
California Public Utilities Commission (CPUC)	Approval regarding utility line relocations.	To be completed following Final ED approval.

Agency	PLAC	Status
California State Lands Commission (CSLC)	Lease for use of State sovereign lands	County coordinated with CSLC in 2018 to determine the need for a lease. Lease application to be completed following Final ED approval.
California State Water Resources Control Board (SWRCB)	Section 402 Clean Water Act, National Pollutant Discharge Elimination System (NPDES) Construction General Permit	To be submitted following Final ED approval.
Central Valley Flood Protection Board (CVFPB	Encroachment Permit	To be submitted following Final ED approval.
Central Valley Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification	To be submitted following Final ED approval.
Federal Emergency Management Agency (FEMA)	Conditional Letter of Map Revision (CLOMR)	To be completed following Final ED approval.
National Marine Fisheries Service (NMFS)	Section 7 Consultation for Threatened and Endangered Species	Formal consultation complete. NMFS issued a non-jeopardy Biological Opinion dated 8 January 2021
United States Army of Engineers (Corps)	Section 404 Permit for filling or dredging waters of the United States.	To be submitted following Final ED approval.
United States Fish and Wildlife Service (USFWS)	Section 7 Consultation for Threatened and Endangered Species	Formal consultation complete. USFWS issue a non-jeopardy Biological Opinion dated 1 December 2020.

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

2.1 Topics Considered but Determined Not to be Relevant

As part of the scoping and environmental analysis carried out for the Project, the following environmental issues were considered but no adverse impacts were identified. As a result, there is no further discussion about these issues in this document.

Coastal Zone: The Project is located in Stanislaus County in the Central Valley, east of and outside the coastal zone.

Wild and Scenic Rivers: The Tuolumne River in the Project area is not designated a federal or state Wild or Scenic River and is not a study river.

Timberland: No lands zoned as Timber Production Zones occur in the Project area. No timberlands do not occur in the Project area. The Project will have no affect on lands subject to the California Timberland Productivity Act of 1982 (CA Government Code Sections 51100 et seq.)

Section 4(f): There are no historic sites, parks and recreational resources, wildlife or waterfowl refuges, which meet the definition of a Section 4(f) resource, within the project vicinity. Therefore, this project is not subject to the provisions of Section 4(f) of the Department of Transportation Act of 1966.

2.2 Human Environment

2.2.1 Existing and Future Land Use

This section describes the existing land use of the study area. For the purposes of this Chapter, the land use study area includes census tracts surrounding the Project alignment with the potential to be affected by the proposed Project (Figure 2.2-1).

2.2.1.1 Affected Environment

Primary information sources for this section includes the Project's Community Impact Assessment document which was approved by Caltrans on 21 May 2020.

Existing Uses: The Claus Road, Garner Road and Faith Home Road corridor is north-south aligned. The Tuolumne River flows east to west through the study area. The land use study area shown on Figure 2.2-1 is divided generally into four quadrants as described below;

- **Northwest Quadrant:** The northwest quadrant includes the area east of Mitchell Road, west of Garner Road and north of the Tuolumne River to SR 132/Yosemite Blvd. Existing land uses within this quadrant include commercial retail, light industrial, and warehouses. The Modesto City-County Airport (Harry Sham Field) abuts the west side of Mitchell Road. The Beard Industrial District occurs south of SR 132. The Modesto and Empire Traction Company (M&ET) short line railroad also occurs in this quadrant.

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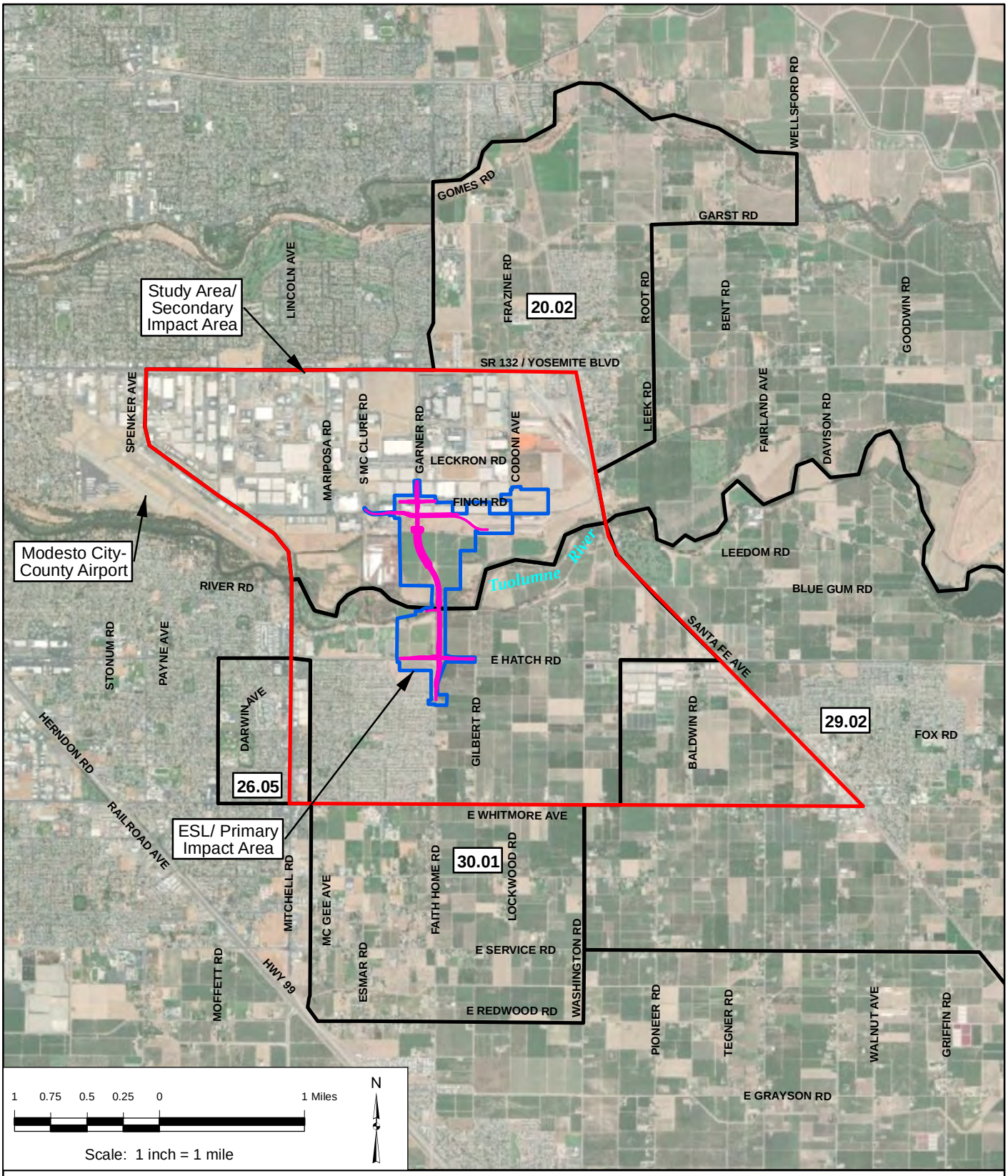

Faith Home Road and Garner Road Connection Project
Stanislaus County, CA
December 2020

Figure 2.2-1.
Community Impacts
Study Area Boundary

Environmental Study Limits (ESL)/ Primary Impact Area

Study Area / Secondary Impact Area

Project Footprint

Census Tract Boundary and Number

2017 Cartographic Boundary File, Current Census Tract for California, 1:500,000, (March 2018), Geographic Div., Cartographic Products and Services Branch, U.S. Census Bureau, U.S. Dept. of Commerce

Aerial Photograph: 11 September 2018
GEO1 Vivid Maxar Imagery
ESRI Arcmap Imagery Basemap layer

15089 FaithHomeRd_GarnerRdExpressway_Fig2_2-1CommunityImpacts.mxd

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- **Northeast Quadrant:** The northeast quadrant includes the area west of Santa Fe Avenue, east of Garner Road and north of the Tuolumne River to SR 132/Yosemite Blvd. Existing land uses within this quadrant include commercial retail, light industrial, warehouses-distribution centers, and transportation. The Beard Industrial District occurs south of SR 132. The Modesto and Empire Traction Company (M&ET) short line railroad occurs in this quadrant.
- **Southwest Quadrant:** The southwest quadrant includes the area east of Mitchell Road, west of Faith Home Road and south of the Tuolumne River to E. Whitmore Avenue. Existing land use within this quadrant is primarily residential. Other uses present include commercial retail, warehouses-distribution centers, agriculture, churches, schools, and parks including Ceres River Bluff Regional Park.
- **Southeast Quadrant:** The southeast quadrant includes the area west of Santa Fe Avenue, east of Faith Home Road and south of the Tuolumne River to E. Whitmore Avenue. The primary existing land-use in this quadrant is agriculture and ag-industrial. Scattered residential uses also occur here.

Land Use Designations: The Faith Home Road, Garner Road, and Claus Road corridor is north-south aligned. The Tuolumne River flows east to west through the study area. The land use designations present in the study area are described below;

- **Northwest Quadrant:** The northwest quadrant is east of Mitchell Road, west of Garner Road and north of the Tuolumne River to SR 132/Yosemite Blvd. It is in the unincorporated portion of the County and also within the sphere of influence of the City of Modesto. There is a small triangular shaped parcel on the south side of Finch Road on the east side of Mitchell Road that is within the City of Modesto limits. The County designated land uses are industrial and urban transition per the Stanislaus County General Plan. The majority of the quadrant is industrial zoned areas. The urban transition lands are located in the floodplain of the Tuolumne River south of the Beard Industrial District.
- **Northeast Quadrant:** This quadrant west of Santa Fe Avenue, east of Garner Road and north of the Tuolumne River to SR 132/Yosemite Blvd is unincorporated lands in the County. The majority of this quadrant occurs in industrial zoned areas. The urban transition lands are located in the floodplain of the Tuolumne River, south of the Beard Industrial Park/ Modesto and Empire Traction Company (M&ET) short line railroad.
- **Southwest Quadrant:** This quadrant includes a portion of the City of Ceres, its sphere of influence as well as unincorporated portions of the County. Per the City of Ceres General Plan Land Use Diagram (2018) land use designations present include service commercial, community commercial, very low density residential, low density residential, medium density residential, parks, schools, business park, commercial and recreation. The area in the Project area south of the Tuolumne River and north of Hatch Road is designated very low density residential. The County land use designation for the Project area south of the Tuolumne River and north of Hatch Road is agriculture.
- **Southeast Quadrant:** This quadrant includes unincorporated portions of the County and portion of the City of Hughson. Portions of the southeast quadrant are in the spheres of influence for both the Cities of Hughson and Ceres. Per the City of Ceres General Plan Land Use Diagram land use designations present include very low density residential, agriculture, and residential agriculture. These designations occur outside the City limits in

the sphere of influence east of Faith Home Road. The City of Hughson General Plan Land Use Designations (2005) for north of E Whitmore Avenue and west of SR 99 is industrial for both the incorporated area and the sphere of influence. The land use designation in the County portion of this quadrant is agriculture. The County land use designation for the Project area south of the Tuolumne River and north of Hatch Road is agriculture.

Development Trends

Stanislaus County: Stanislaus County is bordered by the Coast Ranges to the west and the Sierra Nevada to the east. It spans nearly 1,500 square miles and has approximately 514,000 residents in its nine cities and unincorporated communities. In part because of its proximity to the Bay Area and relative lower cost of living, Stanislaus County is an agricultural county in transition. Prior to 1960, most of the county's population lived on farms; today, the population of the nine incorporated cities is nearly three times that of the unincorporated area of the county. Unprecedented population growth throughout the 1990s increased pressure to convert productive agricultural lands to non-agricultural uses. As a response to this rapid growth, voters passed the 30-Year Land Use Restriction Initiative (Measure E) in 2008, which requires any redesignation or rezoning of land in the unincorporated area from agricultural or open space use to a residential use to be approved by a majority vote of county voters at a general or special local election. The Measure E requirements run with the land, meaning land cannot be approved for non-residential use, then subsequently approved for residential use without a general or special election vote.

Given Measure E's limits on rezoning the only unincorporated communities with any substantial capacity for residential growth that are not subject to Measure E are Diablo Grande and Salida. Stanislaus County does have some existing residential communities outside of city limits. The 2014 general plan update provides for comprehensive planning, with a focus on redevelopment and infill of existing communities while protecting the county's agricultural resources. Although most likely slower than the population boom the county experienced throughout the 1990s and 2000s, continued development and increased population growth is anticipated. StanCOG projects that the population of Stanislaus County would reach 721,582 by 2035, an increase of approximately 170,000 residents from the estimated 2015 population. About 11 percent of that growth is projected to occur in the unincorporated area.

City of Ceres: The City covers approximately 5,989 acres (9.3 square miles). The 2017 population estimate for Ceres was 48,697 and is the second largest City in the County. The City has experienced a rapid growth rate, with an overall estimated increase of approximately 6.1 percent between 2010 and 2017. The City includes mostly low-density residential development, in addition to commercial, office, industrial, and agricultural development, and public facilities, including parks and schools. Between the 1980s and 2010s, the land area of the City roughly doubled with the annexation of the Eastgate Community and large areas of land west of SR 99, including the West Landing Specific Plan area. The economy has evolved from being focused on agriculture and agricultural processing to include more jobs in government and service industries. Some new growth and development would be accommodated by promoting infill of vacant and underutilized lots, or intensification or reuse of land. The City's General Plan, adopted in 2018, did not change its sphere of influence boundary further east and downgraded the Faith Home Road corridor from a six-lane expressway to a four-lane arterial.

City of Hughson: The City covers approximately 988 acres (1.5 square miles). The 2017 population estimate for Hughson was 7,300. The General Plan addressed the "rapid change in Hughson and the region as a whole, with new homes being built at rates never experienced in the past… While recognizing that some change is inevitable and desirable, the City adopted this General Plan to provide the control and regulation necessary to ensure that in the face of these outside pressures, its high quality of life, small-town atmosphere and agricultural traditions continue into the future". Hughson is the youngest city in Stanislaus County, having incorporated in 1972. The City boundary extends west of the railroad tracks. Approximately 20 acres of 110 acres west of the railroad tracks is in the Study Area. Most of the 20 acres is orchard, though it is designated as industrial in the General Plan. A Dairy Farmers of America facility is located along Tully Road.

2.2.1.2 Environmental Consequences

Land use impacts evaluated in the following sections include direct and indirect conflicts with existing and planned land uses, indirect land use impacts, and direct land use impacts.

2.2.1.2.1 Build Alternative

Indirect Land Use Impacts: Temporary construction impacts would affect residents and businesses adjacent to the Project corridor. Indirect impacts include short-term increases in air quality emissions (e.g., diesel fumes and dust from construction activities), noise from heavy equipment operations, and glare and lighting from potential nighttime construction activities. The temporary construction impacts would not result in temporary or permanent changes to land use due to the short duration of construction. Construction also could require temporary lane closures, which could cause temporary traffic delays throughout the Project area during the construction period. The construction contract would require the contractor to maintain driveway access at all times during construction.

Potential permanent indirect land use impacts on residents and employees of businesses along the length of the Project corridor include increased roadway noise and reduced localized air quality because of higher levels of auto and truck emissions. Potential air quality and noise impacts are discussed in detail in the Air Quality Study Report and Noise Study Report prepared for this Project.

The Air Quality Study Report found that the design concept and scope of the proposed Project is consistent with the project description in the 2018 RTP both the 2019 and 2021 FTIP's, and the "open to traffic" assumptions of the StanCOG Air Quality Conformity Analysis. Regional emissions for the proposed Project alternatives are lower than Existing and No-build levels. The proposed Project incorporates the PM10 control measures as outlined in the SJVAPCD's Regulation VIII for construction mitigation, which is consistent with the District's SIP and the District's PM10 Maintenance Plan. Therefore, the Project would not conflict with or obstruct implementation of any SJVAPCD's air quality management plans.

The Noise Study Report found that the existing traffic noise levels were found not to approach or exceed the applicable NAC at representative residential and commercial receiver locations. With the proposed Project, noise levels at all sensitive receivers remain below their respective NAC Activity Category standard. The proposed Project would not cause a noise impact to the surrounding area; therefore, noise abatement would not be required. No adverse noise impacts

from construction are anticipated because construction would be conducted in accordance with the Caltrans' Standard Specifications 14-8.02, "Noise Control".

Direct Land Use Impacts: The Project would require property acquisitions from an estimated 20 parcels. Table 2.2-1 list the assessor's parcels involved and the preliminary amount of right-of-way acquisition required. Preliminary ROW acquisition locations are shown on Figure 2.2-2.

ROW acquisition, intersection reconfiguration, and widening of Garner Road and Faith Home Road south of the Finch Road intersection would displace approximately 15 passenger vehicle parking spots from Don's Mobile Auto Glass (APN 036-016-025). Based on discussions with the company, the parking utilization is approximately 50 to 60 percent of the lot, with other surplus space. Widening of Garner Road/ Faith Home Road south of the Finch Road intersection would require the relocation of Don's Mobile Glass primary truck access. An improved wider truck and public access driveway would be constructed at the west end of the property. The reconfiguration of the parking lot would not result in a hardship for the business.

Acquisition on APN's 036-016-045, 009-018-039, 009-018-053, and 039-011-010 at the north end of the Project area would not reduce the overall number of marked parking spaces at the businesses on these parcels. There would be up to four additional parking stalls added to the California Freight parcel due to the added on-site pavement area. The Sierra Pacific Warehouse parking stalls along Finch road would be slightly shifted (~3 feet north) to accommodate the Finch Road widening. No striped parking stalls are impacted within the Del Monte Facility, however, the Faith Home improvements would reduce the available truck trailer storage area. The County coordinated with the property owner to determine their needs and requirements. Key on-site requirements noted during the coordination included the need to maintain at least a 20 feet buffer around the perimeter of the edge of the building and providing enough space to allow trailer storage along the west side of the building. The County noted that both on-site requirements can be met and incorporated those needs and requirements into the project design.

Table 2.2-1. Preliminary ROW acquisition

Map Id #	Assessor's Parcel Number (APN)	Current Land Use	Area Needed (acres)	Parcel Size (acres)	Remaining Parcel Size (acres)
1	036-016-045	Sierra Pacific Warehouse Group	0.196	12.19	11.99
2	009-018-039	California Freight	0.138	9.99	9.852
3	009-018-053	Del Monte (warehouse)	0.259	4.91	4.651
4	036-016-025	Don's Mobile Glass	0.650	4.20	3.55
5	036-016-029	Delta Sierra Beverage	0.004	9.11	9.106
6	036-016-016	Railroad tracks/ ROW	0.006	2.55	2.544
7	039-011-023	Gilton Resource Recovery / Transfer Facility	0.074	22.84	22.766
8	039-011-010	Don's Mobile Glass	0.143	0.80	0.657

Map Id #	Assessor's Parcel Number (APN)	Current Land Use	Area Needed (acres)	Parcel Size (acres)	Remaining Parcel Size (acres)
9	039-011-004	Railroad tracks/ ROW	0.115	1.10	0.985
10	039-011-021	Agriculture-row crops/ fallow	13.42	68.85	55.43
11	018-061-013	Agriculture-row crops	0.133	30.12	29.987
12	039-011-022	Agriculture-row crops	0.44	30.00	29.56
13	018-061-017	Agriculture-row crops/ natural vegetation	3.800	75.26	71.456
14	018-061-006	Natural Vegetation (riparian)	0.085	1.87	1.785
15	018-062-002	Agriculture-Orchard crops/ residential	6.38	78.19	71.81
16	018-062-001	TID Faith Home Spill	0.026	0.63	0.604
17	039-012-005	TID Office/ natural vegetation	0.293	5.50	5.207
18	039-012-015	Agriculture	0.00	6.50	6.50
19	039-012-016	Agriculture-row crops/ residential	1.094	45.38	44.286
20	018-013-019	Agriculture-Orchard crops	2.085	19.17	17.085
21	018-013-018	Agriculture-Orchard crops	0.721	19.17	18.449
		Totals:	**30.06**	**441.83**	**NA**

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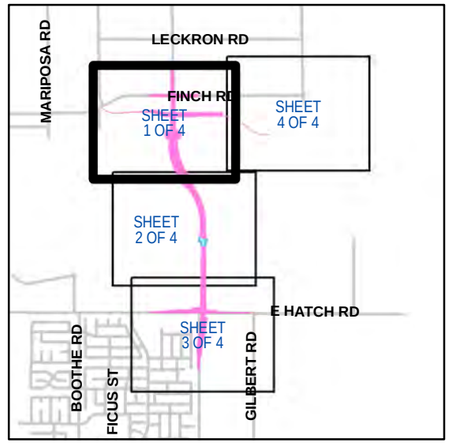
Faith Home Road and Garner Road
Connection Project
Stanislaus County, CA
December 2020

Figure 2.2-2 Preliminary Right-of-way Acquisition
Sheet 1 of 4

APN 036-016-042
APN 036-016-048
MODESTO & EMPIRE TRACTION R.R.
APN 036-016-026
APN 036-016-044
APN 036-016-045
APN 009-018-039
APN 009-018-049
APN 009-018-065
APN 036-016-027
GARNER RD
S MC CLURE RD
APN 036-015-066
APN 036-015-067
FINCH RD
APN 036-016-029
APN 036-016-025
APN 009-018-053
APN 009-018-052
APN 009-018-051
APN 036-016-016
MODESTO & EMPIRE TRACTION R.R.
MATCHLINE - SEE SHEET 4 OF 4
APN 039-011-009
APN 039-011-012
APN 039-011-023
APN 018-061-012
APN 039-011-021
APN 039-011-026
APN 039-011-024
APN 039-011-025
APN 018-061-013
Approximate Toe of Fill
MATCHLINE - SEE SHEET 2 OF 4
SHEET 1 OF 4

1 Preliminary Right-of-way Acquisition
Project Footprint
Road and Railroad Improvements
Retaining Wall
Limits of Grading
Potential Construction Access Route
Parcel Boundaries
1 Map ID Number



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by TY Lin International (Recv'd: 15 June 2018)
Proposed ROW: 098 Proposed ROW 20190517.dwg
by TY Lin International (Recv'd: 20 June 2019)
Parcel Data: Stanislaus County GIS Parcel layer (Downloaded: 31 May 2018)
Aerial Photograph: 11 September 2018
GEO1 Vivid Maxar Imagery, ESRI Arcmap Imagery Basemap layer

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Faith Home Road and Garner Road
Connection Project
Stanislaus County, CA
December 2020

Figure 2.2-2 Preliminary Right-of-way Acquisition
Sheet 2 of 4

MATCHLINE - SEE SHEET 1 OF 4

APN 039-011-024
APN 039-011-025
APN 039-011-021
APN 039-011-019
APN 039-011-020
APN 039-011-022
APN 018-061-013
APN 018-061-017
APN 039-012-013
APN 039-012-015
APN 039-012-016
APN 039-012-014
APN 039-012-005
APN 018-061-006
APN 018-062-002

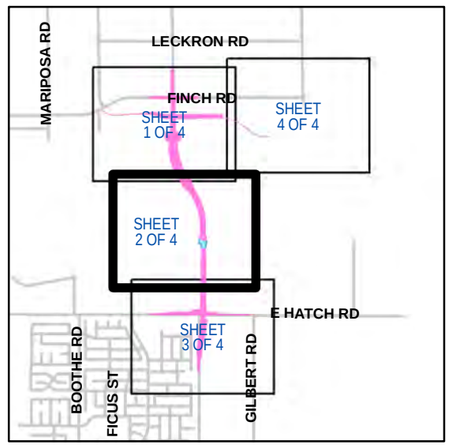
Tuolumne River
Faith Home Spill ditch

10
11
12
13
14
15

MATCHLINE - SEE SHEET 3 OF 4

SHEET 2 OF 4

- Preliminary Right-of-way Acquisition
- Project Footprint
- Road and Railroad Improvements
- Limits of Grading
- Potential Construction Access Route
- Parcel Boundaries
- Tuolumne River OHWM
- Faith Home Spill ditch
- Seasonal Wetland
- 1 Map ID Number



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Topo and Stationing: ACAD-098 Align & Prof.dwg
by TY Lin International (Recv'd: 15 June 2018)
Proposed ROW: 098 Proposed ROW 20190517.dwg
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Aerial Photograph: 11 September 2018
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Faith Home Road and Garner Road
Connection Project
Stanislaus County, CA
December 2020

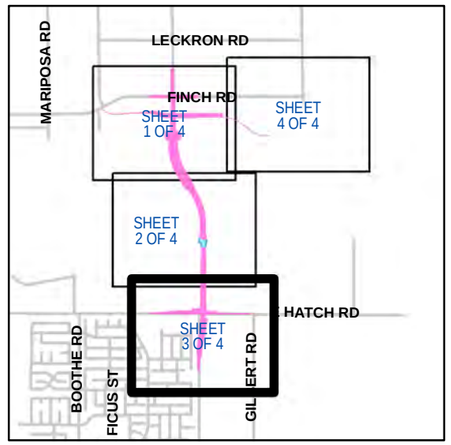
Figure 2.2-2 Preliminary Right-of-way Acquisition
Sheet 3 of 4

MATCHLINE - SEE SHEET 2 OF 4

APN 039-012-014
APN 039-012-016
APN 039-012-005
Faith Home Spill ditch
APN 018-062-002
E HATCH RD
Ceres Main Canal
APN 069-015-013
APN 069-049-002
APN 069-049-003
APN 069-047-049
APN 069-047-048
BOUGAINVILLEA DR
MORELLO DR
FIDDLELEAF LN
MANDEVILLA LN
WATER LILY LN
DUSTY MILLER LN
ATTIKA ST
KIWI DR
BLUE LN
HYACINTH DR
EASTGATE BLV
PODOCARPU DR
PODOCARPUS DR
APN 069-048-071
APN 018-013-019
APN 018-013-001
APN 018-013-047
APN 018-013-046
APN 018-013-018
GILBERT RD
APN 018-013-045
APN 018-013-044
APN 018-013-048
APN 018-013-043
APN 018-013-049

15 16 17 19 20 21

Preliminary Right-of-way Acquisition
Project Footprint
Road and Railroad Improvements
Potential Construction Access Route
Parcel Boundaries
Faith Home Spill ditch
Ceres Main Canal
1 Map ID Number



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Topo and Stationing: ACAD-098 Align & Prof.dwg
by TY Lin International (Recv'd: 15 June 2018)
Proposed ROW: 098 Proposed ROW 20190517.dwg
by TY Lin International (Recv'd: 20 June 2019)
Parcel Data: Stanislaus County GIS Parcel layer (Downloaded: 31 May 2018)
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SHEET 3 OF 4

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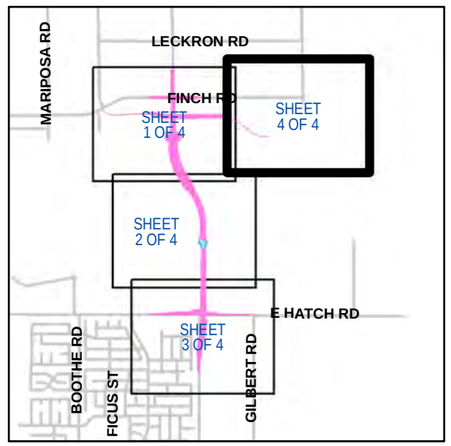
Faith Home Road and Garner Road
Connection Project
Stanislaus County, CA
December 2020

Figure 2.2-2 Preliminary Right-of-way Acquisition
Sheet 4 of 4

APN 009-018-072
APN 009-018-073
APN 009-018-058
APN 009-018-046
APN 009-018-019
APN 009-019-035
APN 009-018-049
APN 009-018-065
APN 009-018-066
CODONI AVE
APN 009-019-014
APN 009-018-010
FINCH RD
Potential Borrow Site
APN 009-018-051
APN 009-018-062
APN 009-018-063
MATCHLINE - SEE SHEET 1 OF 4
APN 018-061-011
APN 018-061-002
APN 018-061-012
APN 018-061-018
APN 018-061-014
APN 018-061-017
APN 018-061-015

SHEET 4 OF 4

Project Footprint
Potential Construction Access Route
Parcel Boundaries
1 Map ID Number



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Topo and Stationing: ACAD-098 Align & Prof.dwg
by TY Lin International (Recv'd: 15 June 2018)
Proposed ROW: 098 Proposed ROW 20190517.dwg
by TY Lin International (Recv'd: 20 June 2019)
Parcel Data: Stanislaus County GIS Parcel layer (Downloaded: 31 May 2018)
Aerial Photograph: 11 September 2018
GEO1 Vivid Maxar Imagery, ESRI Arcmap Imagery Basemap layer

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Parcels 039-011-021, 018-061-013, 018-061-017, 039-011-022, 039-012-016, 018-062-002, 018-013-019, and 018-013-018 are all currently used primarily for agricultural production of row or orchard crops. Land north of the Tuolumne River acquired from APN s 039-011-021, 039-011-022, 018-061-013, and 018-061-017 would become the ROW for the new Faith Home Road and Garner Road Expressway. Land south of the Tuolumne River acquired from APNs 018-062-002, 018-013-018, and 018-013-019 would become the ROW for the new and existing segment of Faith Home Road. Land acquired from APNs 039-012-016 and 018-062-002 would become part of the Hatch Road ROW. Acquisition of land from each of these parcels would not result in the remaining portions of the parcels becoming non-farmable.

On APN 039-011-023, the Gilton Resource Recovery and Transfer Facility, a small sliver of land would be required from the northeast corner of the Property for construction of a potential retaining wall structure. This acquisition is not anticipated permanently affect Gilton Resource Recovery and Transfer Facility's operations.

Parcels 036-016-016 and 039-011-004 are currently part of the M&ET rail line. Portions of these two parcels would be acquired and become part of the new Faith Home Road/ Garner Road ROW.

Parcels 039-012-005 and 018-062-001 are owned by the Turlock Irrigation District and are associated with the Faith Home Spill Ditch facility. Portions of these two parcels would be acquired and become ROW for the new Faith Home Road and Garner Road Expressway and Hatch Road ROW. Parcel 018-061-006 occurs immediately adjacent to the Tuolumne River. A portion of this parcel would become ROW for the new Faith Home Road and Garner Road Expressway.

2.2.1.2.2 No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements and therefore would not directly or indirectly impact land use.

2.2.1.3 Avoidance, Minimization, and/or Mitigation Measures

Implementation of Measure BIO-1 (Riparian Forest), Measure BIO-9 (Vernal pool Fairy shrimp), and Measure BIO-10 (Valley elderberry longhorn beetle) contained in section 2.3 of this document would reduce direct land use impacts.

2.2.2 Consistency with State, Regional, and Local Plans

The following sections assess the Project's consistency with plans and policies adopted by Stanislaus County, the City of Modesto, the City of Ceres, and StanCOG. Only policies with direct relevance to the Project were included in the consistency analysis.

2.2.2.1 Affected Environment

Primary information sources for this section includes the Project's Community Impact Assessment document which was approved by The Department on 21 May 2020.

Local and/or regional plans that are applicable to the Project are listed and discussed further below.

- **Stanislaus County General Plan 2015**
- **City of Ceres General Plan 2035**
- **City of Hughson General Plan 2005**
- **City of Modesto Final Urban Area General Plan**
- **2018 RTP/ SCS**
- **2018 RTIP**
- **2019 FTIP**

2.2.2.2 Environmental Consequences

2.2.2.2.1 Build Alternative

Plans relevant to the Project are evaluated for consistency with the Project described in Section 1.4. For over three decades, Stanislaus County and the Cities of Modesto and Ceres have planned to close the gap between Faith Home Road and Garner Road and bridge the Tuolumne River.

Stanislaus County General Plan 2015: The Stanislaus County General Plan 2015 was adopted by the Board of Supervisors on 23 August 2016. Chapter 2, (Circulation Element) identifies 'special study areas' for several major transportation improvements. The 'Claus/Garner/Faith Home Expressway' is identified as a Special Study Area in Chapter 2, Table II-5 of the General Plan. Official Plan Lines have been prepared for a number of roadways in the County and adopted by the Board of Supervisors. Adoption of Official Plan Lines shows the intent of the County to widen these streets to a specified width along a specified alignment or build a new road at some future time. Chapter 2 includes the following regarding the Project

> *"Claus/Garner/Faith Home Expressway. The general plans of the Cities of Modesto and Ceres plan for the construction of an expressway and new Tuolumne River crossing along the Claus Road, Garner Road, and Faith Home Road corridors from north Modesto to Keyes Road in the Keyes area. A Project Study Report was initiated by StanCOG to develop an Official Plan Line for the route, to resolve internal circulation issues within the Beard Industrial Tract, and determine the best engineering solution to cross the Tuolumne River in this area."*

The Project is consistent with the General Plan given its inclusion and consideration in Chapter 2 of the adopted County General Plan.

Stanislaus County General Plan goals and policies that relate to farmland include the following:

Land Use Element

'*Goal One*: *Provide for diverse land use needs by designating patterns which are responsive to the physical characteristics of the land as well as to environmental, economic, and social concerns of the residents of Stanislaus County.*

> ***Policy Two***: *Land designated Agriculture shall be restricted to uses that are compatible with agricultural practices, including natural resources management, open space, outdoor recreation, and enjoyment of scenic beauty.*'

The Project would not conflict with Policy Two. The Faith Home Road and Garner Road Expressway Project is included in the 2014 RTP/SCS and 2018 RTP/SCS as Tier I projects and are reflected in the analysis of the General Plan update.

'Goal Two: *Ensure compatibility between land uses.*

> ***Policy Twelve:*** *The expansion of urban boundaries of unincorporated communities shall attempt to minimize conflict between various land uses.'*
>
> The Project would not conflict with Policy Twelve as the Project does not include the expansion of urban boundaries.

'Goal Three: *Foster stable economic growth through appropriate land use policies.*

> ***Policy Seventeen:*** *Agriculture, as the primary industry of the County, shall be promoted and protected.'*
>
> The Project does not conflict with the implementation of Goal 3, Policy Seventeen as the Project would not:
>
> - Create parcel for enrollment in Williamson Act,
> - Designate areas to accommodate new businesses,
> - Conflict with the preparation of specific plans when non-agricultural uses are proposed within areas designated for agricultural use,
> - Conflict with the implementation of the Agricultural Element, or
> - Result in Williamson Act parcels less than 10 acre.
>
> ***'Policy Eighteen:*** *Agriculture, as the primary industry of the County, shall be promoted and protected.'*

The Project promotes agriculture by providing a parallel system to SR-99. SR 99 is a major thoroughfare for regional traffic and serves as a primary truck route for regional goods movement within Stanislaus County, the Central Valley and beyond. As traffic congestion escalates on SR 99 and local road thoroughfares such as Mitchell Road and SR 132, it is anticipated that the vital movement of goods and products into and out of the region would face increased delays. The establishment of a parallel system to SR-99 can relieve congestion on this major regional facility by routing traffic to a future Claus Road, Garner Road, and Faith Home Road corridor system and improving goods movement on SR 99 and the region.

***'Goal Five**: Complement the general plans of cities within the County.*

***Policy Twenty-Six:** Development, other than agricultural uses and churches, which requires discretionary approval and is within the sphere of influence of cities or in areas of specific designation created by agreement (e.g., Sperry Avenue and East Las Palmas Corridors), shall not be approved unless first approved by the city within whose sphere of influence it lies or by the city for which areas of specific designation were agreed. Development requests within the spheres of influence or areas of specific designation of any incorporated city shall not be approved unless the development is consistent with agreements with the cities which are in effect at the time of project consideration. Such development must meet the applicable development standards of the affected city as well as any public facilities fee collection agreement in effect at the time of project consideration. (Comment: This policy refers to those development standards that are transferable, such as street improvement standards, landscaping, or setbacks. It does not always apply to standards that require connection to a sanitary sewer system, for example, as that is not always feasible.)'*

The Project is within the sphere of influence for both the City of Modesto and Ceres. The City of Ceres General Plan policy 3.A.9 states "*Multi-Jurisdictional Cooperation. Work with Stanislaus County, the City of Modesto, StanCOG, and Caltrans to establish more coordinated standards and routes for expressways, arterials, and collectors that cross jurisdictional lines. Corridors where partnerships with other agencies may be encouraged include Hatch Road (Stanislaus County/Caltrans/City of Modesto), Mitchell Road (Stanislaus County/City of Modesto), Service Road (Stanislaus County), Faith Home Road (Stanislaus County/City of Modesto), and Crows Landing Road (Stanislaus County/City of Modesto).*"

The City of Modesto's General Plan, Circulation and Transportation Policy 6.a. states '*The streets and highways system should be coordinated with Caltrans', the County's, and other jurisdictions' existing facilities and plans. The adoption of a regional expressway system by the Stanislaus Council of Governments (StanCOG) should be supported, and the components of the regional system that lie within the City's Sphere of Influence shall be incorporated into the City's Circulation and Transportation Diagram. The expressway system shall be designed to accommodate mass transit. The City shall develop an efficient, and well-coordinated, multi-modal (rail/air/bus/bicycle/pedestrian) transportation system.'*

Conservation/Open Space Element

Goal 3: *Provide for the long-term conservation and use of agricultural lands.*

- ***Policy 10:*** *Discourage the division of land which forces the premature cessation of agricultural uses.*
- ***Policy 11:*** *In areas designated "Agriculture" on the Land Use Element, discourage land uses which are incompatible with agriculture.*

The Project would not conflict with Policy 10 or 11. The Project does not restrict access to existing agricultural land or encourage the division of land that could force the premature cessation of agricultural uses. Likewise, a public transportation corridor is not a land use that is incompatible with agriculture.

Agricultural Element

Goal 1: *Strengthen the agricultural sector of our economy.*

- ***Policy 1.1:*** *Efforts to promote the location of new agriculture-related business and industry in Stanislaus County shall be supported.*
- ***Policy 1.2:*** *The marketing and promotion of local agricultural products shall be encouraged.*
- ***Policy 1.3:*** *Efforts to expand markets for the export of local agricultural products shall be encouraged.*
- ***Policy 1.4:*** *Limited visitor-serving commercial uses shall be permissible in agricultural areas if they promote agriculture and are secondary and incidental to the area's agricultural production.*
- ***Policy 1.5****: Agricultural service establishments shall be permissible in agricultural areas if they are designed to serve production agriculture in the immediately surrounding area as opposed to having a widespread service area, and if they will not be detrimental to agricultural use of other property in the vicinity.*
- ***Policy 1.6****: Processing facilities and storage facilities for agricultural products either grown or processed on the site shall be permissible in agricultural areas.*
- ***Policy 1.7****: Concentrations of commercial and industrial uses, even if related to surrounding agricultural activities, are detrimental to the primary use of the land for agriculture and shall not be allowed.*
- ***Policy 1.8****: To encourage vertical integration of agriculture, the County shall allow research, production, processing, distribution, marketing, and wholesale and limited retail sales of agricultural products in agricultural areas, provided such uses do not interfere with surrounding agricultural operations.*
- ***Policy 1.9****: The County shall continue to protect agricultural resources by limiting the circumstances under which agricultural operations may be deemed to constitute a nuisance.*

- ***Policy 1.10****: The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.*
- ***Policy 1.11****: The County shall support state regulations requiring landowners to manage noxious weeds and pests on fallow or abandoned lands.*
- ***Policy 1.12****: To help provide a stable work force for agriculture, the County shall continue to facilitate efforts of individuals, private organizations, and public agencies to provide safe and adequate housing for farm workers.*
- ***Policy 1.13****: Temporary housing for full-time farm employees in connection with any agricultural work or place where agricultural work is being performed shall be supported.*
- ***Policy 1.14****: Permanent, new housing for seasonal farm workers preferably shall be located in areas supplied with public sewer and water services.*
- ***Policy 1.15****: Housing for year-round, full-time farm employees shall be permissible in addition to the number of dwellings normally allowed by the density standard.*
- ***Policy 1.16****: Public education institutions shall be encouraged to provide more technical assistance related to agricultural economic development in Stanislaus County.*
- ***Policy 1.17****: The County shall continue to encourage vocational agriculture programs in local high schools and at Modesto Junior College.*
- ***Policy 1.18****: Public agencies providing agricultural services shall be encouraged to continue agricultural research and education.*
- ***Policy 1.19****: The County shall continue to encourage 4-H and FFA programs for local youth.*
- ***Policy 1.20****: The County shall continue to support the Agricultural Center where offices of public agencies providing agricultural services are centrally located.*
- ***Policy 1.21****: The County shall continue to work with local, state, and federal agencies to ensure the safety of food produced in Stanislaus County and to maintain a local regulatory framework promoting environmental safety while ensuring the economic viability of agriculture.*
- ***Policy 1.22****: The County shall encourage regional coordination of planning and development activities for the entire Central Valley.*

The Project would not conflict with the County's goal of strengthening the agricultural portion of its economy. The Project would not inhibit the County's efforts to promote the location of new agriculture-related business and industry, market and promote local agriculture, nor would it prevent the County's efforts to expand markets for the export of local agricultural products. The Project would not prevent the County from supporting the development of agriculture-related uses including visitor-serving commercial uses, agricultural service establishments, processing facilities, vertical integration of agriculture, and disallowing any concentrations of commercial and industrial uses that are detrimental to use of the land for agriculture and. The Project would not conflict with the County's

right-to-farm ordinance or enforcement and establishment of buffers and setbacks between agricultural lands and adjacent incompatible development. The Project would not interfere with the County's support of state regulations requiring landowners to manage noxious weeds and pests on fallow or abandoned lands. The Project would not interfere with the provisioning of adequate housing for farmworkers. The Project would not interfere with the County's efforts to encourage 4-H and FFA programs for local youth or provide and promote agricultural education and technical assistance to local farmers to help them pursue new market opportunities and develop new products. The Project would not affect food safety or the use of pesticides. Lastly, the Project would not interfere with the County's objective to encourage regional coordination on agricultural issues in the Central Valley.

Goal 2: Conserve our agricultural lands for agricultural uses.

- ***Policy 2.1****:* The County shall continue to provide property tax relief to agricultural landowners by participating in the Williamson Act.
- ***Policy 2.2****:* The County shall support reasonable measures to strengthen the Williamson Act, making it a more effective tool for the protection of agricultural land.
- ***Policy 2.3:*** The County shall ensure all lands enrolled in the Williamson Act are devoted to agricultural and compatible uses supportive of the long-term conservation of agricultural land.
- ***Policy 2.4:*** To reduce development pressures on agricultural lands, higher density development and in- filling shall be encouraged.
- ***Policy 2.5:*** To the greatest extent possible, development shall be directed away from the County's most productive agricultural areas.
- ***Policy 2.6:*** Agricultural lands restricted to agricultural use shall not be assessed to pay for infrastructure needed to accommodate urban development.
- ***Policy 2.7:*** Proposed amendments to the General Plan Diagram (map) that would allow the conversion of agricultural land to non-agricultural uses shall be approved only if they are consistent with the County's conversion criteria.
- ***Policy 2.8:*** In order to further the conservation of agricultural land, the subdivision of agricultural lands shall not result in the creation of parcels for 'residential purposes'. Any residential development on agriculturally zoned land shall be incidental and accessory to the agricultural use of the land.
- ***Policy 2.9:*** Lot line adjustments involving agricultural land shall be primarily created and properly designed for agricultural purposes without materially decreasing the agricultural use of the project site.
- ***Policy 2.10:*** Minimum parcel sizes allowed for lands designated Agriculture shall not promote the expansion of existing, or creation of new, ranchette areas.
- ***Policy 2.11:*** The County recognizes the desire of cities and unincorporated communities to grow and prosper and shall not oppose reasonable requests consistent with city and county agreements to expand, provided the resulting growth minimizes impacts to adjacent agricultural land.

- ***Policy 2.12:*** In order to minimize impacts to adjacent agricultural land, the County shall encourage LAFCO to use physical features such as roads and irrigation laterals as the boundaries for sphere of influence expansions.
- ***Policy 2.13:*** In recognition that unincorporated land within spheres of influence of cities or community services districts and sanitary districts serving unincorporated communities ultimately will be urbanized, the County shall cooperate with cities and unincorporated communities in managing development in sphere of influence areas.
- ***Policy 2.14:*** When the County determines that the proposed conversion of agricultural land to non- agricultural uses could have a significant effect on the environment, the County shall fully evaluate on a project- specific basis the direct and indirect effects, as well as the cumulative effects of the conversion.
- ***Policy 2.15:*** In order to mitigate the conversion of agricultural land resulting from a discretionary project requiring a General Plan or Community Plan amendment from **"**Agriculture**"** to a residential land use designation, the County shall require the replacement of agricultural land at a 1:1 ratio with agricultural land of equal quality located in Stanislaus County.
- ***Policy 2.16:*** The County shall participate in local efforts to identify strategic locations for the purchase of agricultural conservation easements by land trusts and shall promote the long-term viability of farmland in areas surrounding existing farmland held under conservation easements.
- ***Policy 2.17:*** The County shall work cooperatively with the nine cities within the County and to encourage them to adopt agricultural conservation policies or ordinances which are consistent with County policies or ordinances in order to undertake an integrated, comprehensive countywide approach to farmland conservation. It is the ultimate goal of the County to have all nine cities participate in or adopt an agricultural mitigation ordinance that is the same as or substantially similar.
- ***Policy 2.18:*** Construction of a dwelling on an antiquated subdivision parcel shall only be allowed when such development does not create a concentration of residential uses or conflict with agricultural uses of other property in the vicinity.

The Project would not interfere with the County's objective of encouraging continued participation in the Williamson Act. The Project would not inhibit the County's discouragement urbanization and the conversion of agricultural land in unincorporated areas of the County. The Project would not inhibit the County's policy of encouraging high-density development and in-filling to preserve existing agricultural lands or of directing development away from the County's most productive agricultural areas. The "most productive agricultural area" designation does not apply to lands located within established spheres of influence. The Project would not interfere with the County's policy of only allowing amendments to the General Plan Diagram (map) that would allow the conversion of agricultural land to non-agricultural if they are consistent with the County's conversion criteria. The Project would not affect the County's regulation of or involvement in the expansion of cities and unincorporated communities within the county limits. The Project would not affect the County's ability to assess and mitigate impacts resulting from

farmland conversion. The Project would not prevent the County from working cooperatively with the nine cities within the County and to encourage them to adopt agricultural conservation policies or ordinances which are consistent with County policies or ordinances in order to undertake an integrated, comprehensive countywide approach to farmland conservation. Lastly, the Project would not impact of antiquated subdivisions created in the early part of the 1900s.

Goal 3: *Protect the natural resources that sustain our agricultural industry.*

- ***Policy 3.1:*** The County shall continue to coordinate with the San Joaquin Valley Air Pollution Control District.
- ***Policy 3.2:*** The County shall assist the San Joaquin Valley Air Pollution Control District in implementation of adopted plans and regulations.
- ***Policy 3.3:*** The County shall encourage the development and use of improved agricultural practices that improve air quality and are economically feasible.
- ***Policy 3.4:*** The County shall encourage the conservation of water for both agricultural, rural domestic, and urban uses.
- ***Policy 3.5:*** The County will continue to protect the quality of water necessary for crop production and marketing.
- ***Policy 3.6:*** The County will continue to protect local groundwater for agricultural, rural domestic, and urban use in Stanislaus County.
- ***Policy 3.7:*** The County shall encourage the conservation of soil resources.

The Project would not affect the availability of soil resources, high water quality, or clean air in the County. The Project would not interfere in the County's ongoing coordination efforts with the San Joaquin Valley Air Pollution Control District to control air quality. The Project would not interfere with water conservation efforts in the County. The Project would not interfere with the County's efforts to support local Resource Conservation Districts in their activities to support local agriculture.

In addition to the agricultural goals and policies discussed above, the Stanislaus County general plan also specifies buffer and setback guidelines for new or expanded development and mitigation program guidelines for residential development. The purpose of the buffer and setback guidelines is "to protect the long-term health of local agriculture by minimizing conflicts resulting from normal agricultural practices as a consequence of new or expanding nonagricultural uses approved in or adjacent to the A-2 (General Agriculture) zoning district." These guidelines apply to all projects requiring approval by a discretionary permit. The Project is not a development project and does not require a discretionary permit from Stanislaus County. The County's buffer and setback guidelines do not apply to the Project. Likewise, the Project is not a residential development project, and the County's farmland mitigation program guidelines do not apply to the Project.

City of Ceres: The City of Ceres General Plan 2035 was adopted 14 May 2018. Chapter 3 (Transportation & Circulation), section 3.2 (Street and Roadway System) states this regarding expressways and the proposed Project.

"*The 2010 StanCOG Regional Expressway Study identifies planned expressway facilities through Ceres. Two types of expressway facilities are identified for Ceres – Class B and Class C. Class B expressways, which potentially include Faith Home Road and Service Road, restrict access from driveways and local streets, but may allow right-turn access to/from secondary collectors. Class C expressways, which include Hatch Road allow right-in/right-out access from minor streets, and may allow left-turn access from collector streets. Class C expressways are similar to arterial roadways in form, but access controls and preferential treatment for movements on the expressway provide additional capacity. If bicycle facilities are provided, it is usually a parallel Class I facility (discussed later in further detail). Parking is prohibited on expressway facilities. Designated expressways in Ceres include:*

- *Hatch Road from Faith Home Road to Carpenter Road; and*
- *Service Road from Faith Home Road to Carpenter Road.*

Portions of these roadways extend beyond the City of Ceres. Although these roadways are designated expressway facilities, they typically have not been upgraded to expressway standards. Expressways favor the movement of vehicles, including private automobiles, transit vehicles, and goods movement."

The Project is within the sphere of influence of the City of Ceres. The City of Ceres General Plan policy 3.A.9 states "*Multi-Jurisdictional Cooperation. Work with Stanislaus County, the City of Modesto, StanCOG, and Caltrans to establish more coordinated standards and routes for expressways, arterials, and collectors that cross jurisdictional lines. Corridors where partnerships with other agencies may be encouraged include Hatch Road (Stanislaus County/ the Department /City of Modesto), Mitchell Road (Stanislaus County/City of Modesto), Service Road (Stanislaus County), Faith Home Road (Stanislaus County/City of Modesto), and Crows Landing Road (Stanislaus County/City of Modesto).*".

The Project is consistent with the General Plan given that the Project is included and considered in the Transportation and Circulation Element (Chapter 3) of the adopted County General Plan.

City of Hughson: The City of Hughson General Plan 2005 was adopted 12 December 2005. The majority of the City's circulation network is on the east side of the railroad tracks. Chapter 3 (Transportation & Circulation) does not discuss the proposed Project, nor is the proposed Project within the sphere of influence of the City of Hughson.

City of Modesto Final Urban Area General Plan: The Final Urban Area General Plan was adopted by the City Council in October 2008. Sheets 1 and 2 of Figure V-1 in Chapter V (Community Services and Facilities) show the proposed Project as new six lane Class B expressway. Chapter V, Figure V-1 and V-2 of the yet to be adopted a *'General Plan Amendment 2040'* August 2016 also shows the proposed Project as expressway.

The City of Modesto's General Plan, Circulation and Transportation Policy 6.a. states '*The streets and highways system should be coordinated with Caltrans', the County's, and other jurisdictions' existing facilities and plans. The adoption of a regional expressway system by*

the Stanislaus Council of Governments (StanCOG) should be supported, and the components of the regional system that lie within the City's Sphere of Influence shall be incorporated into the City's Circulation and Transportation Diagram. The expressway system shall be designed to accommodate mass transit. The City shall develop an efficient, and well-coordinated, multi-modal (rail/air/bus/bicycle/pedestrian) transportation system.'

The Project is consistent with the City General Plan given that is included and considered in in Chapter V of the adopted County General Plan and the yet to be adopted a *'General Plan Amendment 2040'*.

Stanislaus Council of Governments (StanCOG) 2010 Regional Expressway Study Update: StanCOG prepared the 2010 Regional Expressway Study to serve as an update to the 1990 Study, providing a review of the 1990 Study's implementation to date and providing modifications based on current population projections, travel demand forecasts, local and regional land use and transportation plans, and input from local agencies. StanCog completed three tasks as part of the update process:

- **Regional Expressway Inventory:** Conducting an inventory of existing expressway facilities and currently proposed expressways throughout the County.
- **Planned Expressway System:** Identifying an updated regional expressway system based on the inventory of existing and proposed expressway facilities.
- **Transportation Planning for the Future:** Initiating discussions that incorporate expressways in a multi-modal approach to relieve congestion, increase transportation efficiency, and enhance environmental quality.

The StanCOG 2010 Regional Expressway Study Update of the 1990 Stanislaus County Regional Expressway Study identified Claus Road and Garner Road and Faith Home Road as a north/south corridor expressway comprising three segments extending from Claribel Road in the north to Keyes Road in the south. The proposed Project is within this planned expressway corridor.

2018 RTP/ SCS: The 2018 RTP/SCS specifies the policies, projects, and programs necessary over a 25-year period to improve, manage, and maintain the region's transportation system. The Plan serves as a guide for transportation investment and land use across Stanislaus County throughout 2042. It presents a roadmap for accommodating anticipated growth and development and identifies a transportation investment strategy for achieving regional goals that link air quality, land use, and transportation. The RTP covers all modes of a complete transportation system, including roadways, transit, bicycle/pedestrian improvements and aviation. Appendix K (Project List) includes the proposed Project as fiscally constrained project number 'S103' described as 'Construction of Faith Home River Crossing / Gap Closure (Hatch Road to Garner Viaduct)'. The Project is consistent with the 2018 RTP/SCS.

2021 FTIP: The StanCOG 2021 FTIP is a region wide, multi-year, intermodal program of transportation projects within the StanCOG region. Only projects included in with the RTP may be incorporated into the FTIP. StanCOG is the Metropolitan Planning Organization

(MPO), designated pursuant to federal law, and Regional Transportation Planning Agency (RTPA), designated under state law, for the Stanislaus region. The 2021 FTIP programs the region's projects over the next four federal fiscal years and is a comprehensive list of transportation projects that receive federal funds, require a federal action, or are regionally significant. The FTIP lists the near-term transportation projects, programs, and investment priorities of the region's surface transportation system along with locally and state-funded projects that are regionally significant.

The FTIP is updated every two years and must be financially constrained by Federal Fiscal Year (FFY) and include sufficient financial information to demonstrate that projects can be funded as programmed. Only projects with funds that are "reasonably expected to be available" may be programmed in the FTIP. Additionally, the Stanislaus Region is in an air quality non-attainment area. Therefore, all projects must also be in conformity with the State Implementation Plan (SIP) for air quality before they can be programmed. The Federal Highway Administration and Federal Transit Administration (FTA) concurred with the air quality conformity determination for the 2021 FTIP. The FHWA and FTA approved the State of California's 2021 Federal Statewide Transportation Improvement Program (FSTIP) and incorporated FTIP on 16 April 2021 (Appendix E). FTIP Appendix A (Project List) includes the proposed Project as fiscally constrained project number '*S103*' described as '*Hatch Road to Garner Road 2-Lane Expressway*'.

2.2.2.2.2 No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements included in the Build-Alternative and therefore could be considered inconsistent with the following plans since the plans evaluate or describe the improvements included in the proposed Build-Alternative:

- Stanislaus County General Plan 2015
- City of Ceres General Plan 2035
- City of Modesto Final Urban Area General Plan
- 2018 RTP/ SCS
- 2018 Regional Transportation Improvement Program
- 2019 Federal Transportation Improvement Program

2.2.2.3 Avoidance, Minimization, and/or Mitigation Measures

The Project is consistent with the plans and policies discussed above. No avoidance, minimization, and/or mitigation measures are required.

2.2.3 Parks and Recreational Facilities

2.2.3.1 Regulatory Setting

The Park Preservation Act (California Public Resources Code [PRC] Sections 5400-5409) prohibits local and state agencies from acquiring any property which is in use as a public park at the time of acquisition unless the acquiring agency pays sufficient compensation or land, or both, to enable the operator of the park to replace the park land and any park facilities on that land.

2.2.3.2 Affected Environment

Primary information sources for this section includes the Project's Community Impact Assessment document which was approved by the Department on 21 May 2020.

Stanislaus County: No Stanislaus County Parks occur in the study area. The Project would not affect any Stanislaus County Parks facilities.

City of Ceres: The closest City of Ceres park facility is the 'Ceres River Bluff Regional Park located approximately 0.3 mile west of the Project site. Other Ceres City Parks occur in the study include Persephone Park, Smyrna Park, Berrygrove Park, Riverview Park, Mancini Park, Ceres Whitmore Park, Roeding Heights Park, Redwood Park, and Independence Park.

City of Modesto: The closest City of Modesto park facility is Creekwood Park located approximately 1.3 miles north of the Project site. Other Modesto City Parks occur in the study include Riverside Park, East La Loma Park, Pierre Park, Thousand Oaks Park, Kewin Park, and Brookway Park.

The only recreational resource in the Project footprint is the Tuolumne River. Recreationalist use to river for boating (including kayakers) and fishing. Fishing is allowed January 1st through October 31st. The rest of the year the river is closed to all fishing, due to the salmon runs.

2.2.3.3 Environmental Consequences

Section 4(f) of the Department of Transportation Act of 1966 provides protection for publicly owned parks and recreational resources. However, it has been determined that the facilities within the project vicinity do not meet the definition of a Section 4(f) resource.

2.2.3.3.1 Build Alternative

The proposed Project would not affect County or City Park operations. The construction of the Project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Nor would the Project require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Construction of the Project may require the installation of work trestles in the Tuolumne River or construction of a temporary bypass channel. These Project components could impact river

usage by boaters. Construction would could include installation of a protected channel corridor through which boaters could safely pass under or past the work area.

2.2.3.3.2 No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements and therefore would not directly or indirectly impact parks or recreational facilities.

2.2.3.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of REC-1 would reduce potential impacts to recreational boaters using the Tuolumne River in the Project area during construction.

Measure REC-1 (Protected Channel Corridor)

- *During final design, the protected channel corridor will be designed in consultation with the State Lands Commission as applicable. The design will provide for safe passage horizontally and vertically and include floating fender barriers approximately 50 feet upstream to help direct boats through the channel, as well as adequate netting under construction area to prevent debris from reaching the Tuolumne River. If temporary closure of the Tuolumne River in the Project area is needed during construction of the temporary protected channel corridor signage will be posted at the closest upstream and downstream launch/ pull out facility notifying users. The signage will in place a minimum of 7 days prior to any temporary river closure in the Project area.*

2.2.4 Farmlands

2.2.4.1 Regulatory Setting

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA, 7 United States Code [USC] 4201-4209; and its regulations, 7 Code of Federal Regulations [CFR] Part 658, Farmland Protection Policy Act) require federal agencies, such as the Federal Highway Administration (FHWA), to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

The California Environmental Quality Act (CEQA) requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to discourage the early conversion of agricultural and open space lands to other uses.

2.2.4.2 Affected Environment

Primary information sources for this section includes the Project's Community Impact Assessment document which was approved by the Department on 21 May 2020.

Agriculture is the leading industry in Stanislaus County, generating an annual gross value in excess of a billion dollars into the local economy. Stanislaus County consistently ranks among the top ten agricultural counties in the state and plays a major role in agriculture at the national level, based on market value of agricultural product sold. Agricultural land use in Stanislaus County includes approximately 249,967 acre of Prime Farmland, 33,172 acre of Farmland of Statewide Importance, 116,210 acre of Unique Farmland, and 26,029 acre of Farmland of Local Importance. Agricultural land uses include livestock grazing; hay production; dairies; walnut, almond, and various fruit orchards; row crops; and nurseries.

Table 2.2-2 lists the APN's in the Project area, the jurisdiction (County or City), zoning designation, current use, and Williamson Act contact status.

Table 2.2-2. Assessor's Parcels in the Project Area

Assessor's Parcel Number (APN)	Jurisdiction	Zoning Designation	Current Land Use	Williamson Act Contract Status
036-016-045	County	Industrial Park (M)	Sierra Pacific Warehouse Group	NA
009-018-039	County	Industrial Park (M)	California Freight	NA
036-016-025	County	Industrial Park (M)	Don's Mobile Glass	NA
036-016-029	County	Industrial Park (M)	Delta Sierra Beverage	NA
039-011-010	County	Industrial Park (M)	Don's Mobile Glass	NA
009-018-053	County	Industrial Park (M)	Del Monte (warehouse)	NA
036-016-016	County	Industrial Park (M)	Railroad tracks/ ROW	NA
039-011-004	County	Industrial Park (M)	Railroad tracks/ ROW	NA
039-011-023	County	Industrial Park (M)	Gilton Resource Recovery / Transfer Facility	NA
039-011-021	County	Industrial Park (M)	Agriculture-row crops/ fallow	NA
018-061-013	County	Industrial Park (M)	Agriculture-row crops	NA
039-011-022	County	General Agriculture District, 00 acre (A-2-10) (parcel	Agriculture-row crops	NA

Assessor's Parcel Number (APN)	Jurisdiction	Zoning Designation	Current Land Use	Williamson Act Contract Status
		designated 'Urban Transition')		
018-061-017	County	General Agriculture District, 40 acre (A-2-40) (parcel designated 'Urban Transition')	Agriculture-row crops/ natural vegetation	NA
039-012-016	City of Ceres	Planned Community	Agriculture-row crops/ residential	NA
039-012-005	City of Ceres	Planned Community	TID Office/ natural vegetation	NA
018-061-006	County	General Agriculture District (A-2-40)	Natural Vegetation (riparian)	NA
018-062-002	County	General Agriculture District, 40 acre (A-2-40)	Agriculture-Orchard crops/ residential	Active Contract 1977-2803
018-062-001	City of Ceres	Planned Community	TID Faith Home Spill	NA
018-013-019	County	General Agriculture District, 40 acre (A-2-40)	Agriculture-Orchard crops	NA
018-013-018	County	General Agriculture District (A-2-40)	Agriculture-Orchard crops	NA

In 1973, Stanislaus County adopted a new General Plan concept called urban transition. This designation was placed on property outside the city limits but within a city's general plan boundary. The purpose of the urban transition designation is to ensure that land remains in agricultural usage until urban development consistent with a city's (or unincorporated community's) general plan designation is approved. In the Project area assessor's parcel numbers (APN) 039-011-022 and 018-061-017 are zoned for agriculture and are designated as urban transition lands due to their proximity to the City of Modesto. The remaining APNs in the Project area are not designated as urban transition lands.

2.2.4.3 Environmental Consequences

2.2.4.3.1 Build Alternative

The Project would convert a total of approximately 30.06 acre to public right-of-way (ROW) in order to accommodate the new approximately one-mile long segment of Faith Home Road and Garner Road. The Project would convert approximately 22.6 acres of prime and unique farmland to public ROW. In the Project area assessor's parcel number (APN) 039-011-022 and 018-061-017 are designated as urban transition lands. The remaining parcels north of the Tuolumne River that are currently being used for agriculture are zoned Industrial Park.

Farmland Protection Policy Act: The federal process to assess farmland impacts is guided by the provisions of the Farmland Protection Policy Act (FPPA), which calls for completing Form AD-1006, or Form CPA-106 for linear transportation Projects. In accordance with the instructions for CPA-106, sections I and III were completed and the form sent to the NRCS office in the USDA Service Center in Modesto, CA. NRCS staff determined that the Project area contains 22.6 acres of prime and unique farmland subject to the FPPA, completed sections II, IV, and V of the form, and returned the form to the County. After receiving the form from NRCS, sections VI and VII were completed, yielding a total corridor assessment value for the farmlands in the Project area. A determination was then made whether the proposed conversion is consistent with the FPPA.

The farmlands in the Project area received a total corridor assessment value of 125 points on Form CPA-106. The farmland conversion guidance in Appendix C of the Caltrans Environmental Handbook, Volume 4, indicates that "sites receiving a total score of less than 160 points shall be given minimal level of consideration for protection and no further alternative analysis need be evaluated for farmland issues under the FPPA." The completed CPA-106 form is included in the approved CIA.

Williamson Act: The California Land Conservation Act of 1965 [Cal. Govt. Code S.51200-51295], commonly known as the Williamson Act, provides incentives, through reduced property taxes, to deter the early conversion of agricultural and open space lands. Farmland need not be considered "prime" in order to be placed under provisions of the Williamson Act. All lands defined by the state as "prime farmland," "other than prime farmland," and "open space land" are eligible for coverage by a Williamson Act contract. The Williamson Act prohibits a public agency from acquiring prime farmland covered under the Act for the location of a public improvement if there is other land within or outside the preserve on which it is reasonably feasible to locate the public improvement.

When there is a need for a public agency or other eligible entity to acquire land enrolled in a Williamson Act contract, or located in an agricultural preserve, the Department of Conservation must be notified. The requirement to notice occurs four times in the Land Conservation Act of 1965 statute:

1. Notice is required before making a decision to acquire property located in an agricultural preserve (GC §51290(b));

2. Notice is required within 10 days of acquisition of the property (GC 51291(c));

3. Notice is required if the public entity proposes any significant changes to the acquisition, and

4. Notice is required after acquisition if the acquiring public agency decides not to acquire the property for the intended purpose (GC 51291(d)).

The noticing requirement per the 2014 (amended 2016) California Department of Conservation Public Acquisition Notification Procedures A Step by Step Guide are listed below.

First Notice: The first notice, **must** occur before the public agency makes a decision to acquire a property located in an agricultural preserve. The first notice needs to include the following information:

1. The public agency's explanation of its preliminary considerations of the findings of Government Code §51292 (a) and (b):

    a. "The location is not based primarily on a consideration of the lower cost of acquiring land in an agricultural preserve (§51292(a))."

    b. "There is no other land within or outside of the preserve on which it is reasonably feasible to locate the public improvement (§51292(b))."

2. A description of the agricultural preserve land it intends to acquire;

3. A copy of the Land Conservation Act contract on property that pertains to any land subject to the restrictions of such a contract between the local governing body, city or county, responsible for the administration of the agricultural preserve where the property to be acquired is located.

Second Notice: A second notice is required within 10 working days after acquisition5 (escrow has closed). The second notice shall include the following, if not previously provided due to some exemption in Government Code § 51290 – § 51295 (please state the applicable exemption in second notice):

1) The notice shall include a general explanation of the decision and the findings made pursuant to Government Code §51292.

2) A general description, in text or by diagram, of the agricultural preserve land acquired (a vicinity map is good); and

3) A copy of the applicable Land Conservation Act contract(s).

Note: If the information and documents, noted above, were provided to the Department in the first notice then the second notice need only list the documents as having been previously provided

Third Notice: A third notice is required if there is a significant change in the public improvement that the public agency intends to locate on land that is acquired in an agricultural preserve for such a purpose. The public agency must provide notice to the Department and the local jurisdiction (city/county) regarding increases or decreases in the amount of land acquired; **OR**

Third / Fourth Notice: A third/fourth notice is required if the public agency does not acquire the land it notified the Department it intended to acquire in the first notice and/or the public agency determines not to use the property it acquired for the purpose identified in the first notice. The land must be reenrolled under a contract that is as restrictive as the one it was under before the acquisition occurred (Government Code § 51295).

One parcel (APN 018-062-002) in the Project area is under Williamson Act contract (No. 1977-2803). The Project would need to acquire approximately 6.38 acre of the total 78.19 acre APN 018-062-002. No other agricultural lands within the Project area are currently under Williamson Act contract. Acquisition of land from this Williamson Act Contract parcel is required because there is no other land within or outside of the preserve on which it is reasonably feasible to locate the Project and attain the Project goals. Shifting the alignment west at this location, to avoid Williamson Act contract lands would require relocation of the Faith Home Road Spill Ditch. The relocation of the Faith Home Road Spill Ditch and it associated infrastructure is not feasible. The Project/ bridge has been planned for this location for approximately 30 years and is not based on any consideration of the lower cost of acquiring land in an agricultural preserve (§51292(a)). This document serves as the 'first notice', a copy of the Land Conservation Act contract for APNs 018-062-002 is included in Attachment D. The Project would comply with the remaining noticing requirements of the Land Conservation Act of the 1965.

2.2.4.3.2 No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements and therefore would not directly or indirectly impact farmlands.

2.2.4.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of measure AG-1 would address impacts to Williamson Act contract lands in the Project area.

Measure AG-1 (Williamson Act Parcel 018-062-002)

- Acquisition of ROW from any parcel enrolled in an active Williamson Act Contract will comply with the noticing requirements of the 2014 (amended 2016) California Department of Conservation Public Acquisition Notification Procedures 'A Step by Step Guide'.

2.2.5 Growth

2.2.5.1 Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act (NEPA) of 1969, require evaluation of the potential environmental effects of all proposed federal activities and programs. This provision includes a requirement to examine indirect effects, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations (40 Code of Federal Regulations [CFR] 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act (CEQA) also requires the analysis of a project's potential to induce growth. The CEQA guidelines (Section 15126.2[d]) require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

Based on this guidance, growth inducement impacts would result from a project that would directly or indirectly foster (i.e., promote or encourage) additional economic or population growth or construction of additional housing. Fostering of growth can occur when an obstacle to growth is removed (e.g., when expansion of infrastructure resolves growth-constraining capacity problems). For an analysis to reach the conclusion that a project is growth-inducing, as defined by CEQA, it must find that a project would foster additional growth in economic activity, population, or housing.

Growth rates and patterns are influenced by local, regional, and national forces that reflect social, economic, and technological changes. Ultimately, the amount and location of population growth and economic development that occurs in a specific area are controlled largely by local governments through zoning, land use plans and policies, and decisions regarding development applications. Local government, regional, state, and federal agencies and tribes also make decisions about infrastructure (e.g., roads, water facilities, and sewage facilities) that can influence both the rate and location of future growth.

Transportation infrastructure is one component of the overall infrastructure that may serve to accommodate planned growth. This infrastructure can also serve to hasten or shift planned growth, or to encourage and intensify unplanned growth in an area. Transportation projects may induce growth when they directly or indirectly promote, shift, or intensify planned growth or encourage unplanned growth in a community or region. Construction of a new roadway through an undeveloped area, which could open access to a new area and promote development is an example of a growth-inducing transportation project.

If determined that a project is growth-inducing, the next question is whether that growth may cause adverse effects on the environment. Environmental effects resulting from growth fit the CEQA definition of indirect effects in State CEQA Guidelines Section 15358(a)(2). These indirect effects of growth may result in significant environmental impacts. CEQA does not

require that an environmental impact report (EIR) prepared for a project speculate unduly about the precise location and site-specific characteristics of significant indirect effects caused by induced growth, but a good faith effort is required to disclose what is feasible to assess. Potential secondary/ indirect effects of growth could include consequences that result from growth fostered by a project (e.g., conversion of open space to developed uses, increased demand on community and public services and infrastructure, increased traffic and noise, degradation of air and water quality, or degradation or loss of plant and wildlife habitat).

If significant indirect environmental effects of growth may occur, the final question is whether those effects already have been considered and mitigated, or overridden if unavoidable, in a completed CEQA process. If the induced growth is consistent with an approved general plan or community plan for the area, and if a CEQA document on that plan adequately addresses the effects of growth, the environmental effects of growth induced by the project already have been evaluated. In this circumstance, the CEQA document for a project may refer to the previously completed CEQA document for the impact analysis and does need not reevaluate previously identified impacts. A project that would induce growth inconsistent with an adopted general plan or community plan could indirectly cause additional significant environmental impacts beyond those evaluated in the earlier CEQA document on the plan.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management policies for the affected area. Local land use plans provide development patterns and growth policies that allow orderly expansion of urban development that is supported by adequate urban public services (e.g., water supply, roadway infrastructure, and sewer service). A project that would induce disorderly growth (i.e., conflict with the local land use plans) could indirectly cause additional adverse environmental impacts and other public service impacts, sometimes referred to as secondary impacts. Therefore, to assess whether a growth-inducing project would result in adverse secondary effects, it is important to assess the degree to which the growth accommodated by the project would be consistent with applicable land use plans.

A transportation improvement, such as the proposed Project, would be considered growth inducing if it would cause economic or population increases greater than what is planned by the local agency without the Project. If the improvement would cause new development and an influx of residents, as well as increase the economic strength in an area, it may be growth inducing. It is not assumed that growth in an area is fundamentally beneficial, detrimental, or of little significance to the environment.

The decision to allow potentially induced growth is the subject of separate decision making by the lead agency responsible for allowing such projects to move forward. Because the decision to allow growth is subject to separate discretionary decision making, and because such decision making itself is subject to CEQA, the analysis of growth inducement effects is not intended to determine site-specific environmental impacts or specific mitigation for the potentially induced growth. The discussion is intended to disclose the potential for environmental effects to occur more generally, such that decision makers are aware that additional environmental effects are possible if growth-inducing projects are approved.

2.2.5.2 Affected Environment

Primary information sources for this section include the Project's, Community Impact Assessment document.

Stanislaus County has experienced significant population growth over the past decade. The overall county population increased from approximately 514,453 people in 2010 to an estimated 535,684 in 2017 (4.1 percent increase). During this period, the City Modesto of population increased from approximately 201,898 in 2010 to 210,166 in 2017 (4.0 percent increase), and the City of Ceres population increased from approximately 45,417 in 2010 to 47,650 in 2017 (4.9 percent increase). The City of Hughson population increased from approximately 6,640 in 2010 to 7,551 in 2018 (13.7 percent increase).

Continued population growth in the County, and the Cities of Ceres, Hughson, and Modesto is expected. Growth forecasts developed by the Stanislaus Council of Governments (the designated Regional Transportation Planning Agency for Stanislaus County) indicate that population growth will occur. Projections indicate that the population of Stanislaus County could grow to 740,090 by 2045 (a 43.9 percent increase from 2010).

The Cities of Ceres, Hughson, and Modesto are also planning for growth. The Cities plan to expand infrastructure and public services, decreasing congestion and improving community safety. Growth will occur in the area surrounding the Project if the Project were built or not.

The City of Modesto 2008 general plan anticipates further growth within the City's planning area over the next 20 years, with an estimated 334,000 to 357,000 people in the City's sphere of influence by 2030.

Per the yet to be adopted City of Modesto Urban Area General Plan (UAGP), the ultimate population projected to occur within the UAGP boundary is approximately 390,000, which represents the reasonable estimated population, based on the traffic analyses contained within the draft Master EIR. The UAGP presents a vision of future development for the community and a planning horizon through 2040. The UAGP growth strategy divides the plan area into three geographic areas; the Downtown Area, the Baseline Developed Area (BDA), and the Planned Urbanizing Area (PUA) described below. Each of these areas is treated differently.

- **Downtown Area:** The approximately 710-acre Downtown area is the historic heart of the City, and is a focal point of the Urban Area General Plan as Modesto looks to the future of the City. The zoning standards and regulations that apply to the Downtown will help this high-priority area develop with a mix of Residential, Commercial, Office, and Institutional land uses.

- **Baseline Developed Area (BDA):** The BDA, composed of approximately 22,460 acres excluding the Downtown area, is generally defined as the developed area of the City. However, there are certain developed areas within the City limits that are not part of the BDA (e.g. Village One, Tivoli – see PUA, below). Also included within the

BDA are vacant lands outside the City limits that have a clearly defined future, such as those within the Beard Industrial District.

- **Planned Urbanizing Area (PUA):** Future development within the approximately 19,450-acre PUA will occur on land which is predominantly flat, vacant and/or developed with agricultural uses, and minimally, if at all, served with urban infrastructure, including roads.

The portion of the Project located north of the Tuolumne River is outside the city limits of Modesto but within the City of Modesto BDA. The BDA contains lands which are mostly developed with urban uses and are not expected to change substantially during the General Plan time horizon. The Project does not border the PUA.

The portion of the Project located south of the Tuolumne River boarders the eastern boundary of the City of Ceres and is within the SOI of the City of Ceres. The City of Ceres General Plan accommodates approximately 24,000 new residents, 20,800 new jobs, and 6,900 new households in the Planning Area by 2035. It is expected that much of this growth will occur in the West Landing Specific Plan area and in the southwest portion of the Planning Area, while most of the existing residential neighborhoods will experience less growth and change.

The City of Hughson 2005 general plan anticipates further growth within the City's planning area over the next 20 years, with an estimated net population increase of 2,854 people in the City's sphere of influence by 2030.

The City expanded its sphere of influence during the 2005 planning process. West of the BNSF railroad and South Santa Fe Avenue, the land use in the expanded city boundary is designated as industrial. Residential growth was directed to the east and north of the City, with an agricultural buffer east of Euclid Avenue.

2.2.5.2.1 Current and Planned Development Projects

Stanislaus County: A review of the 'Active Planning Projects' listed on the Stanislas County, Planning Division website was conducted to determine if any development projects are occurring and where they are located. A total of approximately 83 projects were reviewed of which three occur in the land use study area. Two of the projects are located in the in the Beard Industrial Park area and the third is located north of Yosemite Blvd./ SR 132 in the Empire area. All three projects submitted use permit and development agreement applications for the production and distribution of cannabis. These three projects are not located in the Project area.

City of Modesto: Some new growth and development would be accommodated by promoting infill of vacant and underutilized lots, or intensification or reuse of land. In addition, the City will continue to expand into its sphere of influence. Per the August 2017 'Opportunity Sites' map produced by the City, few development opportunities occur in the land use study area. Development opportunities include 2 areas with final parcel maps and approximately 70-80 parcels identified as Tier 1 (sites with available infrastructure). No development opportunity sites are identified within the Project area.

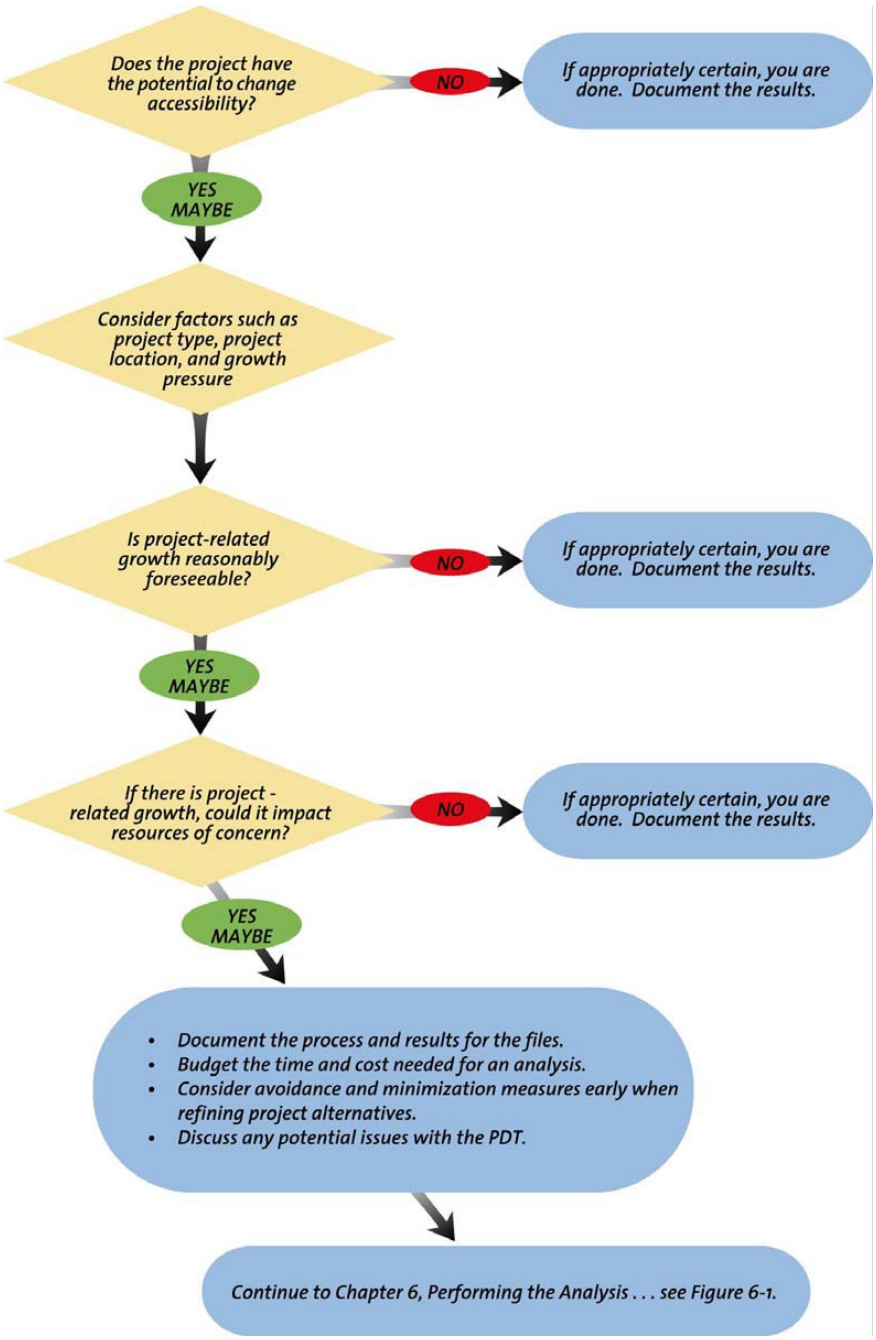
City of Ceres: Figure 2.2 'Potential Opportunity Sites' of the 2018 City general plan also shows current development projects (approved/under review/under construction). Per Figure 2.2 'Potential Opportunity Sites' there are 541 acres of vacant land, 121 acres of underutilized land, 1,076 acres of rural land, and 187 acres of additional sites identified within the Ceres SOI. Within the Project area two vacant parcels are identified west of the intersection of Faith Home Road and Hatch Road. None of the other current development projects shown on Figure 2.2 of the 2018 City general plan are in the Project area. In the land use study area, three projects are shown along the Mitchell Road corridor and two projects are shown in the northeast portion of the City along River Road.

City of Hughson: In 2019, the City prepared a "Goals Report" as part of a multi-year planning effort to re-evaluate and update the City's "goals and objectives". A workshop was held to determine the priorities, values and vision for the community. The City's Vision Statement was updated along with a new Mission Statement. Goal 6 is to "Improve Viability of and Expand Industrial Area." In the land use study area, implementation of Goal 6 may result in future industrial development within the sphere of influence.

2.2.5.2.2 First-Cut Screening

A first-cut screening was performed in accordance with the 2006 Caltrans '*Guidance for Preparers of Growth-Related, Indirect Impact Analyses*' (Guidance document) to determine the potential for growth-related impacts associated with the Project. The interrelated screening factors (accessibility, growth pressure, project type, and project location) discussed in Guidance document Chapter 5 and summarized in Guidance Figure 5-1 were considered. The Guidance Figure 5.1 (The First Cut) presents four questions and is reproduced below as Figure 2.2-3.

Figure 2.2-3. Guidance Figure 5.1 (The First Cut)



Affirmative answers to all four questions (bold) result in the preparation of a detailed growth analysis per Chapter 6 of the Guidance document. A negative answer to any of the four questions concludes the First Cut screening.

Question 1. Does the project have the potential to change accessibility?

Answer 1. Yes. In terms of accessibility, the Project would help close an existing regional transportation gap between SR 132 and SR 99, improve regional and interregional circulation within Stanislaus County and the Cities of Modesto and Ceres, relieve traffic congestion and

Improve operations, and create an efficient freight goods movement corridor. The Project would not result new access to vacant land or lands designated as agriculture. In fact, majority of the Expressway is a causeway (a raised roadway on structure) over the Tuolumne River, a regulatory floodplain, in which no residential, commercial, or industrial develop would occur.

Question 2 and 3: Consider factors such as project type, project location, and growth pressure. Is the project-related growth reasonably foreseeable?

Answer 2 and 3. The Project has a potential to create growth related impacts. Much of the growth in the study area outside of the immediate Project area is foreseeable, it is not necessarily project-related.

The County, City of Modesto, and City of Ceres have provided land use designations to guide future growth in the study area; and new development must adhere to these land use designations, per the rules and regulations of the relevant jurisdictions. Adherence to these restrictions reduces pressure for unplanned development by making adequate quantities of land available for development in locations that best serve the policy goals of the relevant jurisdictions. Impacts of the project related to growth pressure would be consistent with the existing planning framework.

As stated previously, growth is expected in the study area. The growth in the study area has been planned for over thirty years and is included in the County, Modesto, and Ceres' general plans. The population of the County and Cities of Ceres, Hughson, and Modesto is growing. This growth would not be directly attributable to the Project.

As discussed in Section 2.1.1.1 above, Stanislaus County's Measure E substantially limits the conversion of agricultural lands in Stanislaus County to non-agricultural uses. Since its enactment in 2008, no conversions of agricultural land subject to Measure E have been approved. Growth in the surrounding communities is planned, but not attributed to this Project. This Project would not open new lands nor provide access to underdeveloped areas.

Question 4. If there is project-related growth, could it impact resources of concern?

Answer 4. Maybe. Land use in the Project Area, also referred to as the Primary Impact Area, consists of urbanized developments, agricultural lands, and industrial areas. Significant resources of concern within the Primary Impact Area include farmland, natural communities of special concern, and special status species.

Based on the answers above, a growth-related analysis has been prepared.

2.2.5.2.3 Growth-Related Analysis

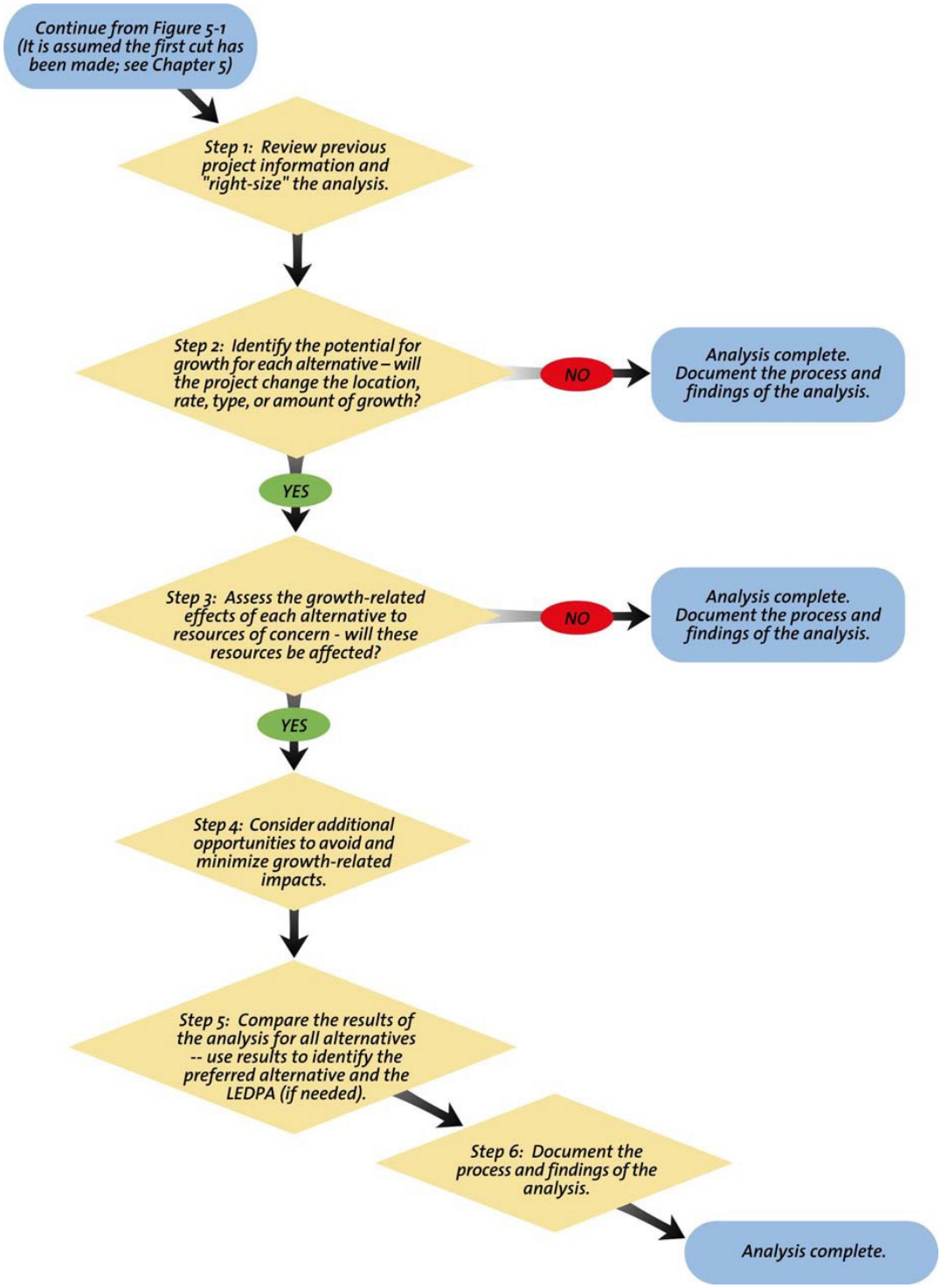
The growth-related effect analysis is used to determine whether a transportation project could contribute to growth-related effect that would affect resources of concern. As illustrated in the 2006 Caltrans Guidance Figure 6-1 (The Analysis), the following steps serve as guidelines for

identifying and assessing growth-related effects of a proposed transportation project and are used in the Environmental Consequences Section below (2.1.5.3):

- Step 1: Review Previous Project Information and “Right-size” the Analysis
- Step 2: Identify the Potential for Growth for Each Alternative
- Step 3: Assess the Growth-related Effects of each Alternative to Resources of Concern
- Step 4: Consider Additional Opportunities to Avoid and Minimize Growth-related Impacts
- Step 5: Compare the Results of the Analysis for All Alternatives
- Step 6: Document the Process and Findings of the Analysis

Guidance document Figure 6-1 is reproduced below as Figure 2.2-4.

Figure 2.2-4. Guidance Figure 6.1 (The Analysis)



2.2.5.3 Environmental Consequences

Step 1, Right-Size the Analysis: The first-cut screening suggests that growth related to the Project may occur, and this growth may affect the resources of concern in the region. Both quantitative and qualitative data sources were gathered to analyze growth-related project impacts. Quantitative data contributed to the growth-related effect analysis include U.S. census data on the County and cities existing populations, growth forecast from the U.S. Census Bureau, and technical studies on the resources of concern for the proposed project. Qualitative information analyzed includes the County and cities' general plan goals, specific plan development goals, and future land use plans that pertain to the study area.

Steps 2 - 6 will be discussed separately for the Build Alternative (Section 2.2.5.3.1) and No-Build Alternative (Section 2.2.5.3.2)

2.2.5.3.1 Build Alternative

While Stanislaus County, the cities, and the Department are continually working to improve traffic operations in the study area, the existing roadway network was not planned to accommodate the amount of growth that has occurred in recent years, nor growth projected to occur in the region in the future. As a result, traffic congestion has become an increasing problem on some local roadways, SR 132 and Yosemite Blvd, and SR 99. To resolve the issue, the Project has been proposed by regional authorities for three decades. The Project is included in Stanislaus County General Plan, Stanislaus County RTP, and Cities of Ceres, Hughson, and Modesto general plans.

Step 2, Potential Growth: The *Regional Growth Forecast 2018-2045* in the RTP indicates that the population in Stanislaus County will increase by 29.6 percent between 2020 and 2045, regardless of whether the 2018 RTP is implemented. The forecasted growth rate is less than the 2014 RTP's forecast of 48.6 percent for the 2010 to 2040 timeframe. The proposed Project is one of the proposed projects under the 2018 RTP that is designed and intended to accommodate anticipated growth up to the year 2044. Goal 4 of the RTP states that the plan aims to provide a mix of land uses and compact development patterns and direct development towards existing infrastructure, which will preserve agricultural land, open space, and natural resources.

The purpose of the proposed project is to address existing congestion and safety concerns. The proposed improvements are needed to keep pace with developing conditions and prevent future deterioration in level of service. The proposed project also aims to improve access within and between existing and future communities, including those of Ceres, Hughson, Modesto, and unincorporated area of Stanislaus County.

The project study area encompasses land that has a high growth potential. These areas include the Cities of Ceres, Hughson, and Modesto, and each of the City's sphere of influence over unincorporated lands in the County.

Faith Home Road is the eastern limit of the City of Ceres municipal boundary and the adopted sphere of influence. Both boundaries extend north of Hatch Road to the Tuolumne River. Between Mitchell Road and the eastern city boundary, the City General Plan designates an

existing golf course as Commercial Recreational, the River Bluff Regional Park as Park, and the farmland as Very Low Density Residential. The City General Plan identifies Very Low Density Residential on the east side of Faith Home Road. During the City's General Plan Update process, public comment was sought to determine if the Very Low Density Residential designation should be redesignated as General Industrial and Industrial Reserve. The City conducted two years of public outreach, both in English and Spanish. Several community workshops were held, in addition to a 'street faire' and an open house presentation. Based on public input, the adopted General Plan retained the Very Low Density Residential designation. Furthermore, the eastern portion of the Ceres General Plan Study area is designated Agriculture. There is a City General Plan Policy regarding the adoption of an Ag Buffer between the Cities of Ceres and Hughson. When complete, the Ag Buffer would severely restrict development in this portion of the Ceres General Plan east of Faith Home Road. The City General Plan Implementation Matrix #2.6 identifies the following action to implement the corresponding General Plan policy 2.B.3:

> "*Providing reciprocal agreements are reached with the City of Hughson and Stanislaus County, establish a permanent urban growth boundary on the eastern boundary of the Planning Area to permanently limit urban development and preserve agricultural lands east of the city. The permanent urban growth boundary should include buffers to minimize the impacts of urban development on the immediately adjacent agricultural lands.*"

The study area includes vacant parcels and agricultural parcels within the City of Modesto's sphere of influence, which extends south to the Tuolumne River. The Beard Industrial District south of SR 132/ Yosemite Blvd, has vacant parcels. The vacant parcels are likely to develop with or without the proposed project. The agricultural lands north of the Tuolumne River are in the 100-year floodplain. The agricultural lands are protected from development through federal, State, and local ordinances and regulations. The Federal Emergency Management Agency's (FEMA) 100-year floodplain map is used by Modesto as the floodplain map. From north bluff to the south bluff, the Tuolumne River floodplain is under the jurisdiction of the Central Valley Flood Protection Board as a Regulatory Floodway with a design flood capacity of 44,000 cubic feet per second. The City's Floodplain Management Ordinance (Title 9, Chapter 4) requires new urban development shall be protected from 200-year flood. The City Ordinance prohibits encroachments within an adopted regulatory floodway unless a registered civil engineer certifies the encroachment would not result in any increase in flood levels during a base flood discharge. The construction of a levee to create developable land in the floodplain would require an equal offset of the volume of flood storage capacity. Practically speaking, excess floodway capacity does not exist in the Tuolumne River floodplain between the San Joaquin River and the La Grange Dam.

No unplanned growth is anticipated to occur within the project limits. The proposed Project is located adjacent to lands that have planned future growth. The project is compatible with the goals identified in the RTP.

The proposed Project would not directly result in unplanned growth. The project would not create additional public services on which homes and businesses rely, such water services

from private wells and septic systems. The project would not create access to previously inaccessible areas. Implementation of the project, would result in increased accessibility in areas surrounding the project.

The Guidance document says research has shown that although accessibility improvements rarely change the rate of growth of a region, change in accessibility can influence the direction of growth in a region and the rate of growth in local areas. Even in areas where there is no net change in the overall amount of growth, the design or location of a transportation project can alter the patterns of land use and extent of potential impacts to resources. The reduction in congestion and improved safety associated with the proposed project could influence travel behavior, trip patterns, or the attractiveness of some undeveloped areas along the corridor.

As emphasized by the City and County planning policies, preservation of agricultural lands is the primary planning goal in the County and nearby cities. Stanislaus County Ordinance 9.32.050 is a right-to-farm ordinance that requires notification to persons purchasing lots adjacent to agricultural land that the inconveniences or discomforts associated with agricultural operations shall not be considered a nuisance if the operations are consistent with accepted customs and standard. The County adopted the Farmland Mitigation Program to aid in mitigating the loss of farmland on a 1:1 ratio to the amount of farmland converted to residential use. The County added the Program as a new element in their 2007 General Plan Agricultural Element. Though the Program was challenged in court, the County prevailed in 2010 in the court of appeal. The City of Hughson's Municipal Code 17.03.064 is a right-to-farm ordinance that sets a goal to work cooperatively with the County to protect agricultural lands in and around Hughson. The City of Hughson's Farmland Preservation Program requires the protection of farmland based on a 2:1 ratio. Conversion of farmland in the region has also been limited by local, State, and Federal policies. Currently, no other development is planned in the vicinity of the project, and it appears that, for the foreseeable future, agricultural uses will continue to dominate.

In the future, factors such as transportation, population growth, economic growth, availability of developable land, lower cost, and desirable location along the future corridor may lead to increased growth pressure in the project study area. As discussed above, the Cities of Ceres and Hughson are not expanding their spheres of influence towards each other, in light of such expected growth. Rather, efforts are underway to preserve a green belt of agriculture between the two cities. Future development, then, would be directed to the developable land outside of the study area, and such growth pressure may act as a factor to accelerate the conversion of agricultural and other open space lands to development uses. Ultimately, cities and Stanislaus County have the decision-making authority over land use in terms of location, amount, type, and rate of development pursuant to its respective plans and policies.

Step 3, Growth-related Effects: Due to the above reasons, it does not appear that the proposed Project would cause unplanned growth within the study area, nor would it change growth patterns. Implementation of the project may attract future development in the region. Consequently, compared to the No-Build Alternative, the local rate of growth along the selected alignment may accelerate. The proposed Project is located within or close to the Cities of Ceres and Modesto's spheres of influence, where future growth and development are

anticipated and planned for. Such growth is anticipated to occur regardless of whether the proposed Project is implemented. The proposed Project is needed to provide adequate infrastructure for anticipated planned future growth, as the County RTP and general plan documents have assumed the existence of the project in their analyses. Additionally, this growth would be in compliance with Goal 4 of the County RTP, "Provide mixed land uses and compact development patterns, and direct development toward existing infrastructure to preserve agricultural land, open space, and natural resources."

The main resource of concern within the spheres of influence is farmland. Other developable lands, such as empty lots or abandoned properties, are also present in the study area. Because the proposed Project is included in the County's RTP and approved by the cities, effects of planned growth in these areas and effects on natural resources have been analyzed by local jurisdictions through their land use section of their General and Specific Plan documents. As discussed above, the agricultural lands between Ceres and Hughson are intended to be preserved as a green belt, limiting or precluding the potential to attract future development. Currently, there are no future/foreseeable development plans in unincorporated County land.

The proposed Project's direct effects to farmland, natural communities of concern, and special status species are summarized in Table 2.2-3. Habitat for many species overlaps with one another; many of the bird species have a similar foraging and/or nesting habitat within the project area. In general, there are fewer resources of concern within the Beard Industrial District and the Cities of Ceres and Hughson. Resources outside of the project's Primary Impact Area were not surveyed; however, it is assumed that the distribution of these resources in a larger area follows a similar pattern and density as the resources surveyed along the alternative alignments.

Table 2.2-3. Effects to Resources of Concern

Biological Community	Project Footprint Acreage	Temporary Impact (acre)	Permanent Impact (acre)	Total Impacts (acre)
Agriculture	147.23	133.29	13.94	147.23
Orchard	19.54	8.87	9.52	18.39
Riparian Forest	7.39	2.56	2.39	4.95
Tuolumne River OHWM	3.17	0.28	0.02	0.30
Ceres Main Canal	2.99	1.46	0.12	1.58
Faith Home Spill ditch	1.10	0.20	0.05	0.25
Seasonal Wetland	0.12	0	0	0
Habitat for Vernal pool fairy shrimp	0.17	0	0.17	0.17
Habitat for Vernal pool tadpole shrimp	0.17	0	0.17	0.17
Habitat for Valley elderberry longhorn beetle	1.24	0	1.24	1.24

Biological Community	Project Footprint Acreage	Temporary Impact (acre)	Permanent Impact (acre)	Total Impacts (acre)
Habitat for Hardhead	3.17	0.28	0.02	0.30
Habitat for Steelhead – California central valley	3.17	0.28	0.02	0.30
Habitat for Chinook salmon	3.17	0.28	0.02	0.30
Habitat for Silvery legless lizard	7.39	2.56	2.39	4.95
Habitat for Western pond turtle	10.56	2.84	2.41	5.25
Habitat for Migratory birds and birds of prey	275.34	217.97	47.42	265.39
Foraging Habitat for Tricolored blackbird	147.23	133.29	13.94	147.23
Habitat for Burrowing owl	33.14	26.27	5.77	32.04
Habitat for Swainson's hawk	180.37	159.56	18.71	179.27
Habitat for Townsend's big-eared bat	7.39	2.56	2.39	4.95

Source: Natural Environment Study, Sycamore Environmental 2020

Potential adverse effects to resources in the area, including farmland, natural habitat and special status species, have been or will be evaluated in the County and cities' land use development plans for specific development project. Future discretionary projects proposed in the unincorporated County will be subject to CEQA and, if residential, subject to Measure E. The County would comply with CEQA and perform environmental analysis to ensure minimal adverse effects to any resources concern.

Step 4, Additional Opportunities to Avoid and Minimize Growth-related Effects: Growth effect created by the proposed Project would be minimized through land use policies and the construction schedule. Municipal growth boundaries and zoning code set forth by the County and cities (previously outlined in Section 2.1 above) would restrict unplanned growth. Agricultural land in the study area is also protected by FPPA, the Williamson Act, and/or local policies, including Measure E, as discussed in Section 2.2 above. These policies and restrictions would prevent a sudden increase in growth rate and minimize any growth-related effects. In addition, construction of Phase 2, the full four-lane facility, is limited by funding availability and would occur progressively over the next 20 years. During which time, growth would naturally occur in the study area.

Step 5, Compare the Results: The proposed Project is designed to accommodate past and future planned regional growth as discussed in the Stanislaus County General Plan, RTP, and cities' general plans. The proposed Project does not have any specific growth-related impacts; however, the following comparison discusses the relative risks to environmental resources should future, unforeseeable growth or development occur. Future development patterns would ultimately be determined by multiple factors such as population growth,

economic growth, land availability, cost and desirability, as well as the approval of land use change by the County or cities.

The proposed Project is the phased construction of a four-lane expressway. The initial construction of Phase 1 would provide a two-lane road facility. Phase 2 would expand the road to a full four-lane facility to accommodate planned growth in the study area. The proposed Project maintains the planned growth patterns in Modesto and Ceres, and the future growth patterns identified in the RTP.

As discussed in Section 3.2.1, the No-Build Alternative may lead to higher rates of growth in areas not identified in the RTP. Congestion on existing transportation network would continue to worsen as a result of the increased population and traffic volume, resulting in inefficient movement of people and goods. The No-Build Alternative does not meet the Purpose and Need of the project.

Step 6: Findings of Analysis: The proposed Project is part of StanCOG's regional transportation strategy that is intended to adequately accommodate the planned growth in the region. Implementation of the proposed Project has the potential to attract future residential, commercial, and industrial development in the region towards the corridor; thereby increasing the local rate of growth along the proposed Project corridor. Future development patterns would ultimately be determined by multiple factors such as population growth, economic growth, land availability, cost and desirability, as well as the approval of land use change by the County or cities.

As suggested by the analysis, the proposed Project would result in minimal risk to resources of concern and help achieve the County RTP goals for compact development and preservation of farmland, open space and natural resources. The No-Build Alternative is not a preferred option because it does not meet the Purpose and Need of Project.

2.2.5.3.2 No-Build Alternative

Step 2, Potential Growth: Land use in the Project Area, also referred to as the Primary Impact Area, consists of urbanized developments, agricultural lands, and industrial areas. As discussed in the First-Cut Screening, the County and city planning documents and policies emphasize the preservation of agricultural lands. Local, State, and federal policies limit the conversion of farmland in the region. Even if the No-Build Alternative were selected, planned growth in the study area is likely to occur.

Step 3, Growth-related Effects: Under No-build Alternative conditions, traffic congestion on local roads, SR 132/Yosemite Blvd, and SR 99 would continue to worsen as projected traffic volume increases. The traffic congestion would continue to inhibit the efficient movement of goods. The proposed Project is a planned part of the interregional system that would result in a reduction of VMT. Under the No-Build alternative, interregional circulation would become increasingly constrained as travel times on existing transportation network increase substantially with the addition of planned residential and employment growth.

Step 4, Additional Opportunities to Avoid and Minimize Growth-related Effects: As emphasized by the City and County planning policies, preservation of agricultural lands is a primary planning goal in the County and nearby cities. Within the study area, agricultural lands are mostly in the unincorporated portions of Stanislaus County and are subject to Measure E. Measure E provides the residents of the County an opportunity to authorize or not authorize the conversion of agricultural lands. Measure E constitutes an additional opportunity that allows county residents to avoid or minimize growth-related effects.

Step 5, Compare the Results: Some growth-related, indirect effects to resources of concern would occur under the No-Build alternative due to future planned developments within the project area. This effect would result from the future planned development of vacant and agricultural parcels in the urban and suburban fringe land and along major roads near the intersections.

Under the No-Build Alternative conditions, congestion on existing transportation network would continue to worsen as a result of the increased population and traffic volume, resulting in inefficient movement of people and goods. Resources of concern in the project area would not be affected by the project; however, by not implementing the proposed project as planned in the RTP, growth may be attracted to other areas with better traffic circulation. Areas that are more accessible throughout the County may experience growth at a higher rate than identified in the RTP.

Step 6, Findings of Analysis: Congestion on existing local roads, SR 132/Yosemite Blvd, and SR 99 would continue to worsen as a result of the increased population and traffic volume, resulting in inefficient movement of people and goods. The No-Build Alternative does not meet the Purpose and Need of the Project.

2.2.5.4 Avoidance, Minimization, and/or Mitigation Measures

The proposed Project is in conformance with the goals, plans, programs, and policies identified in the Stanislaus County General Plan, Stanislaus County RTP, and the general plans and specific plans of the Cities of Ceres, Hughson, and Modesto. The Project has been proposed for over 30 years. Goals and policies such as sustainable development, land use and transportation planning, farmland conservation, natural resource conservation, and jobs-housing balance have been identified in regional and local plans to avoid and minimize any growth-related effects. Therefore, no additional avoidance, minimization, and/or mitigation measures are proposed.

2.2.6 Community Impacts

2.2.6.1 Community Character and Cohesion

2.2.6.1.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 USC 4331[b][2]). The Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h])

directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under the CEQA, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this Project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the Project's effects.

2.2.6.1.2 Affected Environment

Primary information sources for this section includes the Project's Community Impact Assessment document which was approved by the Department on 21 May 2020.

The study area generally is divided into four quadrants as described in Section 2.1.1 (Land Use). The Tuolumne River separates the north from south quadrants and the Faith Home Road and Garner Road corridor forms the north/south dividing line which separates the east and west quadrants. Pedestrian and bicycle crossings of the Tuolumne River are limited to the 9th Avenue and Mitchell Road crossings in the study area. These facilities do not provide formal bike facilities but include sidewalks. The Santa Fe Avenue Bridge upstream of the Project is currently being replaced. When complete the new crossing will have 12 feet road shoulders. Figure 3-4 of the 2013 StanCOG Non-Motorized Transportation Master Plan shows that 9th Avenue, Mitchell Road, and Santa Fe Avenue crossing do not have existing bikeways. Per Figure 3-5 of the 2013 StanCOG Non-Motorized Transportation Master Plan future bicycle facilities are proposed for 9th Avenue, Mitchell Road, and Santa Fe Avenue crossings.

The north is further divided by SR 132/ Yosemite Blvd, primarily residential development occurs north of SR 132/ Yosemite Blvd and mostly commercial/ industrial uses occur south of this major east west roadway. The Modesto City/ County Airport further divides the northwest quadrant, with commercial/ industrial uses to the east and mixed residential commercial to the west.

The study area also is divided between the unincorporated county and Cities of Ceres, Hughson, and Modesto. Each city receives different municipal services, has different schools, and are governed by different representatives than those in the other Cities. Potential impacts to business located adjacent to the Project are described in section 2.2.7 (Utilities/ Emergency Services. Demographic is provided in section 2.2.6.3 (Environmental Justice).

The Department's guidelines for conducting Community Impact Assessments define community cohesion as the degree to which residents have a "sense of belonging" to their neighborhood; a level of commitment of the residents to the community; or a strong attachment to neighbors, groups, or institutions—usually because of continued association

over time. Communities often are delineated by physical barriers such as rivers, major roadways or large open space areas.

2.2.6.1.3 Environmental Consequences

Build Alternative

The Project would provide another link between the north and south portions of the study area. The Project would not divide existing neighborhoods. The Project would not separate residences from community facilities or result in the removal of a community facility. As discussed in section 2.1.5 the Project is not growth inducing. The Project would improve circulation within the study area and the regional area of the County and the Cities of Modesto and Ceres.

No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements and therefore would not directly or indirectly impact community character or cohesion.

2.2.6.1.4 Avoidance, Minimization, and/or Mitigation Measures

The Project would not divide existing neighborhoods. The Project would not separate residences from community facilities or result in the removal of a community facility. As discussed in section 2.1.5, the Project is not growth inducing. No avoidance, minimization, and/or mitigation measures are required.

2.2.6.2 Relocations and Real Property Acquisition

2.2.6.2.1 Regulatory Setting

The Department's Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons would not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix B for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix A for a copy of the Department's Title VI Policy Statement.

2.2.6.2.2 Affected Environment

Primary information sources for this section includes the Project's Community Impact Assessment document which was approved by the Department on 21 May 2020. The Project does not require any residential, commercial, or industrial relocations. Partial acquisitions would be needed for the new road and bridge.

2.2.6.2.3 Environmental Consequences

Build Alternative

The Project does not require any residential, commercial, or industrial relocations. The Project would require partial property acquisitions from an estimated 20 parcels. Table 2.2-1 above lists the assessor's parcels involved and the preliminary amount of right-of-way acquisition anticipated. Preliminary ROW acquisition locations are shown on Figure 2.2-2. The partial acquisitions would not damage accessibility or result in an economic hardship to the businesses. None of the businesses or residential uses would be adversely impacted by noise to the extent that it would require a relocation.

No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements and therefore would not require any residential, commercial, or industrial relocations.

2.2.6.2.4 Avoidance, Minimization, and/or Mitigation Measures

The Project does not require any residential, commercial, or industrial relocations. The partial acquisitions would not damage accessibility or result in an economic hardship to the businesses. None of the businesses or residential uses would be adversely impacted by noise to the extent that it would require a relocation. No avoidance, minimization, and/or mitigation measures are required.

2.2.6.3 Environmental Justice

2.2.6.3.1 Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2019, this was $ 25,750 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964, and related statutes, have also been included in this Project. The Department's commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix A of this document.

2.2.6.3.2 Affected Environment

Primary information sources for this section includes the Project's Community Impact Assessment document which was approved by the Department on 21 May 2020.

The study area traverses 15 census tracts listed in below. The physical footprint of the Project traverses census tracts 20.02 and 30.01 only. The remaining 13 census tracts are located adjacent to the physical footprint of the Project.

• 18.00	• 20.04	• 21.00	• 26.03	• 27.01
• 19.00	• 20.05	• 23.02	• 26.04	• 27.02
• 20.02	• 20.06	• 26.02	• 26.05	• 30.01

Data collected by the Census Bureau within these tracts have been used to identify minority and low-income populations within the study area. Data regarding minority groups was obtained from 2010 Census and income data was obtained from the 2013-2017 American Community Survey 5-Year Estimates. Population statistics regarding race and low-income populations from census tract data within the study area were compared to the census data for the entire County of Stanislaus (Figures 2.2-5 and 2.2-6).

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Figure 2.2-5. Comparison of Minority Populations. (Note: The 'White' category is inclusive of the Hispanic population. Per the 2010 U.S. Census the Hispanic/ Latino group represented 41.9 percent of the population of Stanislaus County.)

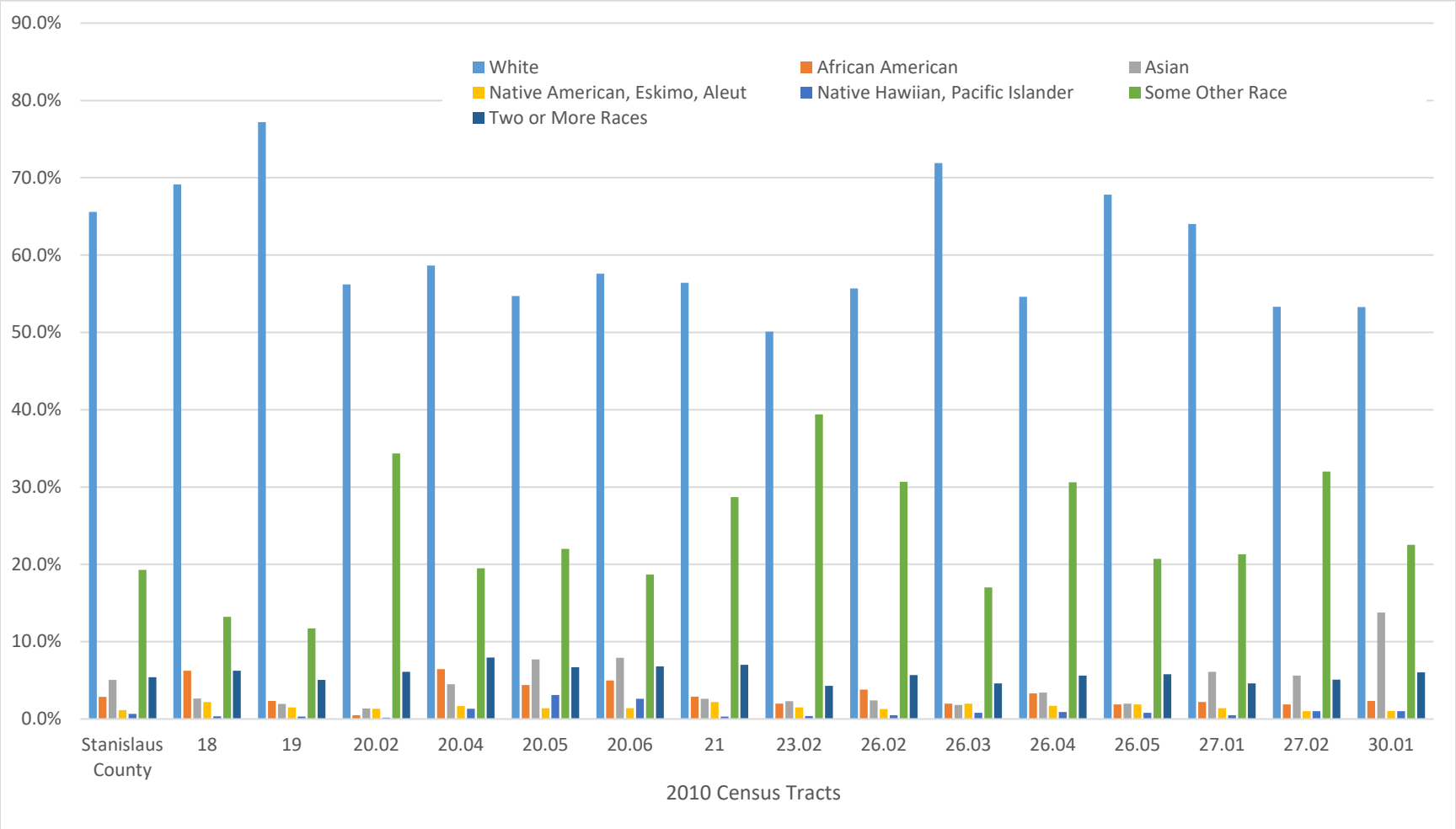

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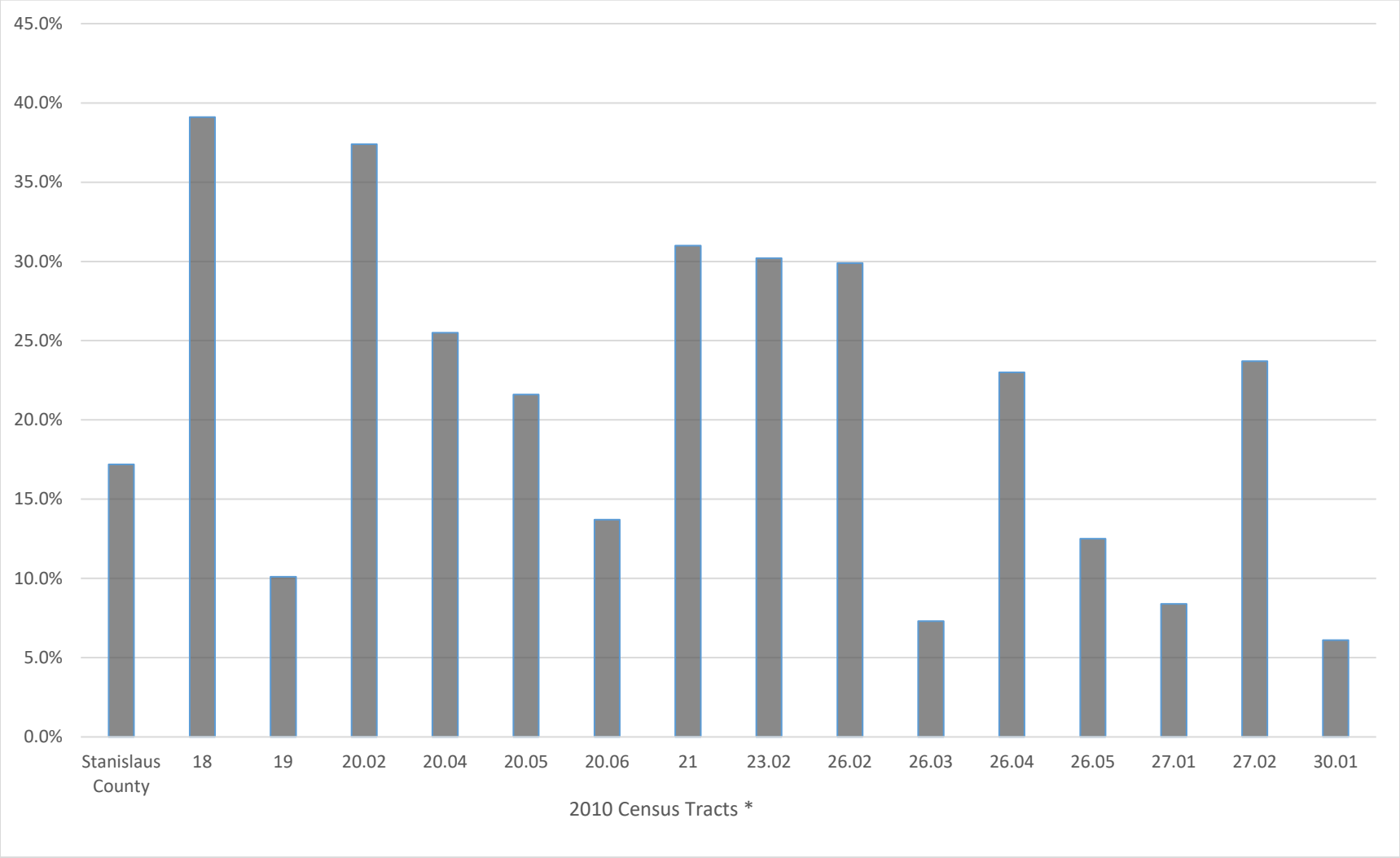
Figure 2.2-6. Percent of People with Income Below the Poverty Level in the Last 12 Months based on 2013-2017 American Community Survey 5-Year Estimates.



* Census tracts are small, relatively permanent statistical subdivisions of a county that are uniquely numbered in each county with a numeric code. The percent people with income below the poverty level for Stanislaus County is the sum of all census tract data for the County.

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2.2.6.3.3 Environmental Consequences

Build Alternative

Based on the data presented above, one or more minority populations occur in greater proportions in census tracts traversed by the Project while other tracts have a lower or similar minority population percentages than Stanislaus County as a whole.

The Project would benefit the majority of study area residents, including minority and low-income populations, by improving mobility and circulation throughout the study area. These effects would be experienced by communities that have a higher minority population and a higher number of persons below the poverty line when compared to Stanislaus County. The proposed Project serves both intraregional and interregional traffic, the transportation benefits listed below would be available to all residents of the County.

- Closing the mile-long roadway gap will improve operations between SR 132 and SR 99.

- Improve intraregional and interregional circulation within Stanislaus County and the Cities of Modesto and Ceres

- Relieve traffic congestion and Improve operations

Based on the above analysis, the Project would affect minority and low-income populations, as well as non-minority and higher-income populations, resulting from temporary construction impacts. The Project does not involve any residential property acquisition, no residential zoned properties occur in the Project area. Land use impacts are minimal and include the minor use of industrial and agricultural zoned land to complete the project.

Based on the above discussion and analysis, the proposed build alternative will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898. No further environmental justice analysis is required.

No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements and therefore would not directly or indirectly impact an environmental justice issue.

2.2.6.3.4 Avoidance, Minimization, and/or Mitigation Measures

No measures are needed and no further environmental justice analysis is required.

2.2.7 Utilities / Emergency Services

2.2.7.1 Affected Environment

Primary information sources for this section includes the Project's Community Impact Assessment document which was approved by the Department on 21 May 2020.

2.2.7.1.1 Utilities

Utilities in the Project area include stormwater, sewer, water and electrical service. A 230kV overhead electrical transmission line, owned and operated by Modesto Irrigation District (MID), occurs at the north end of the Project area and crosses over the proposed road alignment. Two 12kV overhead power lines occur at the north end of the Project area. One line is located along the north side of Finch Road in an east-west alignment. The other is located on the west side of Garner Road in a north-south alignment.

Electricity and Natural Gas: The MID provides electrical service to the portion of the Project located north of the Tuolumne River. The TID provides electrical service to the portion of the Project located south of the Tuolumne River. Pacific Gas and Electric provides natural gas service to the study area.

Water Supply: The MID sells domestic water to the City of Modesto. The City of Modesto domestic water system supplies water to communities in the surrounding region including Waterford, Hickman, Del Rio, Salida, Empire, Grayson, and small portions of Ceres and Turlock. The Utilities Department of the City of Modesto is responsible for the delivery of potable water.

The City of Ceres potable water is all drawn from groundwater supplies deep within the San Joaquin Valley Groundwater aquifer Turlock Subbasin from 12 individual groundwater wells owned and operated exclusively by the City. Additionally, the system has two storage tanks with a total storage capacity of 3.8 million gallons respectively. The City of Hughson draws potable water from three active groundwater wells.

Wastewater: The Utilities Department of the City of Modesto is responsible for the collection, treatment and disposal of wastewater and stormwater. The City's wastewater service area includes all incorporated areas of Modesto, a portion of north Ceres, the unincorporated community of Empire, and unincorporated "islands" in Stanislaus County, including the Beard Industrial District, that are served by agreement. The City of Modesto owns and operates two wastewater treatment facilities.

The City of Ceres Wastewater System Division is responsible for operating and maintaining the City's Wastewater Treatment Plant and the Wastewater Collection System. The Wastewater Treatment Plant treats over 2.7 million gallons of wastewater per day.

The City of Hughson Public Works Department is responsible for operating and maintaining the City's Sewer Treatment Plant. The plant capacity is 1.8 million gallons and treats over 0.9 million gallons.

Solid Waste: Bertolotti Disposal and Transfer Station and Gilton Solid Waste Management provide residential, commercial, and industrial solid waste services in cities and unincorporated portions of Stanislas County.

2.2.7.1.2 Emergency Services

Police: The City of Ceres Police Department provides law enforcement services in the southwest portion of the study area within the City limits. The Ceres Police Department is located at 2727 3rd St. in Ceres. The Modesto Police Department provides law enforcement services in the north portion of the study area within the City limits. The Modesto Police Department is located at 610 10th St, in Modesto. The Stanislaus County Sheriff's Department provides law enforcement services in the unincorporated portion of the study area. The Stanislaus County Sheriff's Department primary location is 250 East Hackett Road in Modesto.

Fire & Emergency Medical Services (EMS): The fire and EMS services system in Stanislaus County, as is the case in most counties in California, is a complex mix of municipal agencies, fire protection districts (FPD), and various forms of State fire protection. Fire departments and districts within the study area include:

- Ceres Fire Protection District
- City of Modesto Fire Department
- City of Ceres Fire Department
- Stanislaus Consolidated Fire Protection District
- Keyes Fire Protection District
- Hughson Fire Protection District

2.2.7.2 Environmental Consequences

2.2.7.2.1 Build Alternative

2.2.7.2.1.1 Utilities

The Project would require alteration of utility poles associated with the 12 kV distribution line in the north portion of the Project area. One existing wooden utility pole, located in the southwest portion of the Finch Road and Garner Road intersection next to the existing truck access driveway at Don's Mobile Glass (APN 036-016-025) would need to be relocated further west and south of the existing location. The existing wooden utility poles from Finch north to the railroad along the west side of Garner Road would need to be relocated as they are currently within the proposed improvement limits. The existing east west aligned wooden utility poles along the north side of Finch Road would require relocation. They would be located outside the road improvement limits. The relocation of these utility poles is expected to require a temporary outage ranging from several hours to one full 8-hour work shift.

The Project would also require the relocation of one high voltage metal power pole owned and operated by the MID. The existing 230 kV high voltage metal power pole is located in the southeast portion of the Finch Road and Garner Road intersection on the Del Monte parcel APN 009-018-053. The pole would be relocated to a paved portion of the California Freight parcel APN 009-018-039 approximately 125 feet north of its current location.

In addition to the relocation of overhead electric lines the Project would require relocation of an electrical box and a gas line valve to the southwest of the new Finch Road and Garner Road intersection. In both cases, the new location would be built prior to shutting off the existing location. The changeover may result in a temporary short limitation of power that would likely occur during a non-peak period, such as early morning hours.

No other temporary Project impacts to utilities are anticipated. No permanent adverse impacts to utilities are anticipated.

The existing underground storm drain line that extends south from Garner Road and Finch Road (Outfall 3) conflicts with the proposed improvements and would be redesigned. The existing 18-in. line that runs from east-to-west near the M&ET railroad would need to be realigned in the vicinity of Garner Road to accommodate the proposed expressway.

2.2.7.2.1.2 Emergency Services

It is expected that emergency service centers and providers in the project vicinity would be minimally affected during construction. During construction, short-term lane closures on Finch Road and Garner Road and Hatch Road could be necessary throughout the project corridor. The County would notify the following emergency service providers prior to any short-term lane closures and as necessary make provisional access available for emergency access as needed.

- Ceres FPD
- City of Modesto Fire Department
- City of Ceres Fire Department
- Stanislaus Consolidated FPD
- Keyes FPD
- Hughson FPD

Once complete the Project would provide an additional crossing of the Tuolumne River. This would benefit emergency service providers providing an addition river crossing to use if traffic or other conditions dictate. The Project would not result in additional risks or additional needs to augment emergency resources.

2.2.7.2.2 No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements and therefore would not directly or indirectly impact any utilities of emergency services.

2.2.7.2.3 Avoidance, Minimization, and/or Mitigation Measures

Implementation measure TRAFFIC-2 (Traffic Management Plan (TMP)) would ensure that construction would not create major delays for emergency service providers. No other measure is needed.

2.2.8 Traffic and Transportation/ Pedestrian and Bicycle Facilities

2.2.8.1 Regulatory Setting

2.2.8.1.1 Federal and State

The Department, as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of Federal-aid highway projects (see 23 Code of Federal Regulations [CFR] 652). It further directs that the special needs of the elderly and the disabled must be considered in all Federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR 27) implementing section 504 of the Rehabilitation Act (29 United States Code [USC] 794). The FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

2.2.8.1.2 Regional and Local

Stanislaus County: Policy 2, Implementation Measure 1 from the *Stanislaus County General Plan*, Circulation Element applies:

> *'The County shall maintain LOS D or better for all County roadways (Daily LOS) and LOS C or better at intersections (Peak Hour LOS), except, within the sphere of influence of a city that has adopted a lower level of service standard, the City standard shall apply. The County may allow either a higher or lower level of service standard for roadways and intersections within urban areas such as Community Plan areas, but in no case shall the adopted LOS fall below LOS D.'*

City of Modesto: Chapter V of the City of Modesto *Urban Area General Plan* states the following with regard to LOS:

> *'The City may allow individual locations to fall below the City's LOS standards in instances where the construction of physical improvements would be infeasible, be prohibitively expensive, significantly impact adjacent properties or the environment, significantly impact non-motorized transportation systems, or have significant adverse effect on the character of the community. To the extent feasible, the City shall strive for LOS D on all streets and intersections.'*

City of Ceres General Plan:

"*The City shall develop and manage its roadway system to maintain Level-of-Service of at least C on secondary collectors and local streets and Level-of-Service D on primary collectors, arterials, expressways, and freeways.*"

City of Hughson General Plan

"*The City shall strive to maintain a LOS of D on major streets and intersections. The City will strive to maintain this LOS during peak traffic hours, but recognizes that this may not always be feasible due to constraints associated with the built environment. Because seasonal traffic volume variation due to agricultural activities will represent a reduced percentage of the overall traffic as the County develops with urban uses, and is limited to a few months a year, the policy is to maintain LOS D under "typical" or "average annual" conditions versus during the peak agricultural harvest season."*

The LOS thresholds from the Stanislaus County General Plan, Cities of Modesto, Ceres, and Hughson for intersections and freeway segments are summarized in Table 2.2-4 and roadway segments LOS thresholds are summarized in Table 2.2-5.

Table 2.2-4. Intersection and Freeway LOS Thresholds

Study Location	Jurisdiction	LOS Threshold
1. Claus Road and Scenic Drive	Modesto	D
2. Mitchell Road and El Vista Avenue and SR 132	The Department /Modesto	D
3. Garner Road and Claus Road and SR 132	The Department /Modesto	D
4. Santa Fe Avenue and SR 132	The Department /Modesto	D
5. Mitchell Road and Finch Road	Modesto	D
6. Garner Road and Finch Road	Modesto	D
7. Mitchell Road and Hatch Road	Ceres	D
8. Faith Home Road and Hatch Road	Ceres	D
9. Santa Fe Avenue and Hatch Road	Hughson	D
10. Faith Home Road and Whitmore Avenue	Ceres	D
11. Mitchell Road and Service Road	Ceres	D
12. Faith Home Road and Service Road	Ceres	D

Study Location	Jurisdiction	LOS Threshold
13. Faith Home Road and Keyes Road	Stanislaus County	C
14. SR 99 Southbound Ramps and Keyes Road	The Department /Stanislaus County	C
15. SR 99 Northbound Ramps and Keyes Road	The Department /Stanislaus County	C
SR 99 Freeway	The Department	D

Table 2.2-5. Roadway LOS Thresholds

Study Location	Jurisdiction	LOS Threshold
1. Mitchell Road south of SR 132	Modesto	D
2. Garner Road south of SR 132	Modesto	D
3. SR 132 west of Santa Fe Avenue	The Department /Modesto	D
4. Santa Fe Avenue south of SR 132	Modesto	D
5. Mitchell Road north of Finch Road	Modesto	D
6. Garner Road north of Finch Road	Modesto	D
7. Mitchell Road south of Finch Road	Modesto	D
8. Mitchell Road south of Hatch Road	Ceres	D
9. Hatch Road west of Faith Home Road	Ceres	D
10. Faith Home Road south of Hatch Road	Ceres	D
11. Santa Fe Avenue south of Hatch Road	Hughson	D
12. Mitchell Road north of Service Road	Ceres	D
13. Faith Home Road north of Service Road	Ceres	D
14. Faith Home Road north of Keyes Road	Stanislaus County	D

15. Keyes Road west of SR 99	Stanislaus County	D

2.2.8.2 Affected Environment

Primary information sources for this section include the Project's Transportation Analysis Report (TAR).

The proposed Project's transportation analysis study area extends from the Claus Road and Scenic Drive intersection in the north to the SR 99 freeway south of Keyes Road. The westernmost study location is Mitchell Road/El Vista Avenue and SR 132 intersection in Modesto and the easternmost study location is Santa Fe Avenue south of Hatch Road in Hughson. Figure 2.2-7 shows the roadways, intersections, and freeway segments in the study area.

The study locations were selected based on the expected effect that the proposed Faith Home Road and Garner Road Expressway and bridge over the Tuolumne River would have on the transportation network. The bridge is part of a planned expressway from Keyes Road in the south to Claribel Road in the north that would facilitate north-south travel in the county. An initial select link run using the travel demand forecasting model showed a high demand for travel from SR 99 to the south, along Faith Home Road and Garner Road, to Claus Road in the north. This route is expected to divert traffic demand from parallel routes along SR 99, Mitchell Road, and Santa Fe Avenue. The study intersections are shown in Table 2.2-6, the study freeway segments in Table 2.2-7, and roadway study locations in Table 2.2-8.

Table 2.2-6. Project Transportation Analysis Report Study Intersections

Intersection (Figure 2.2-7 Map ID)	
Claus Road and Scenic Drive (1)	Santa Fe Avenue and Hatch Road (9)
Mitchell Road/El Vista Avenue and SR 132 (2)	Faith Home Road and Whitmore Avenue (10)
Garner Road/Claus Road and SR 132 (3)	Mitchell Road and Service Road (11)
Santa Fe Avenue and SR 132 (4)	Faith Home Road and Service Road (12)
Mitchell Road and Finch Road (5)	Faith Home Road and Keyes Road (13)
Garner Road and Finch Road (6)	SR 99 Southbound Ramps and Keyes Road (14)
Mitchell Road and Hatch Road (7)	SR 99 Northbound Ramps and Keyes Road (15)
Faith Home Road and Hatch Road (8)	

Figure 2.2-7. Study Area

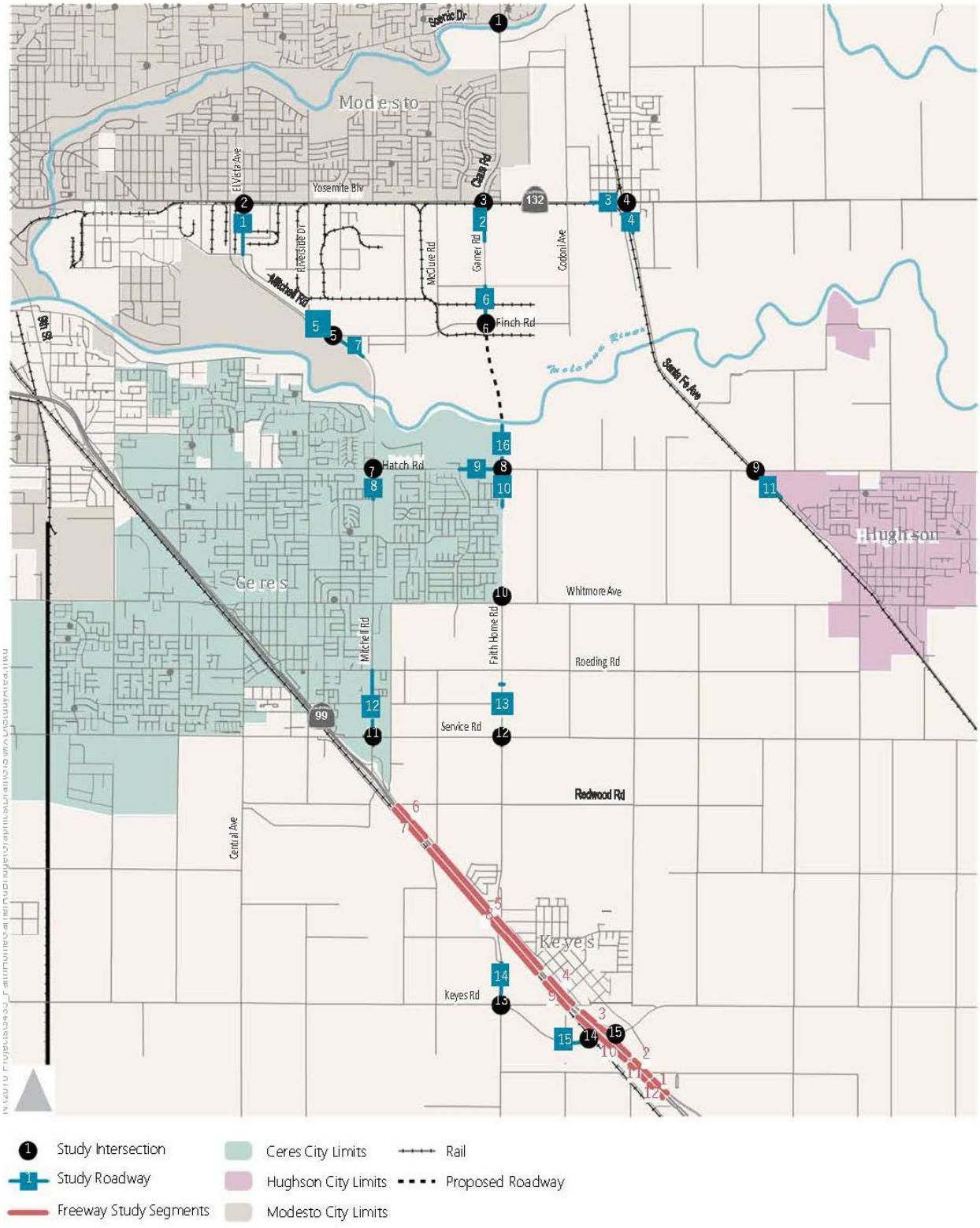

Table 2.2-7. Project Transportation Analysis Report, Freeway Study Segments

Freeway Segment (Figure 2.2-7 Map ID)	
Northbound SR 99	Southbound SR 99
Taylor Road to Keyes Road (1)	Mitchell Road On-ramp (7)
Keyes Road Off-ramp (2)	Mitchell Road to Keyes Road (8)
Keyes Road Off-ramp to On-ramp (3)	Keyes Road Off-ramp (9)
Keyes Road On-ramp (4)	Keyes Road Off-ramp to On-ramp (10)
Keyes Road to Mitchell Road (5)	Keyes Road On-ramp (11)
Mitchell Road Off-ramp (6)	Keyes Road to Taylor Road (12)

Table 2.2-8. Project Transportation Analysis Report, Roadway Study Locations

Roadway Location (Figure 2.2-7 Map ID)	
Mitchell Road south of SR 132 (1)	Hatch Road west of Faith Home Road (9)
Garner Road south of SR 132 (2)	Faith Home Road south of Hatch Road (10)
SR 132 west of Santa Fe Avenue (3)	Santa Fe Avenue south of Hatch Road (11)
Santa Fe Avenue south of SR 132 (4)	Mitchell Road north of Service Road (12)
Mitchell Road north of Finch Road (5)	Faith Home Road north of Service Road (13)
Garner Road north of Finch Road (6)	Faith Home Road north of Keyes Road (14)
Mitchell Road south of Finch Road (7)	Keyes Road west of SR 99 (15)
Mitchell Road south of Hatch Road (8)	Faith Home Road north of Hatch Road (16)

Daily roadway counts, AM and PM peak period freeway counts, and AM and PM peak period intersection turning movement counts were collected for the Faith Home Road and Garner Road Expressway Project. These counts were collected on a typical midweek day. The freeway and intersection counts were collected from 7:00 to 9:00 AM and 4:00 to 6:00 PM. The peak period counts included heavy vehicles, bicycles, and pedestrians.

The majority of traffic count data was collected in March 2017. The remaining data came from previous studies including:

- The roadway counts on Faith Home Road from Hatch Road to Keyes Road and on Santa Fe Avenue were conducted in 2015 and 2016 for the City of Ceres General Plan study.

- The intersection counts at Mitchell Road and Hatch Road and Faith Home Road at Whitmore Avenue, Service Road, and Keyes Road were conducted in 2016.

Table 2.2-9 summarizes the observed peak hour, peak hour factor, and truck percentage for each count location.

Table 2.2-9. Peak Hour Traffic Count Data Statistics

Peak Hour Start Time			**Peak Hour Factor**		**Truck Percentage**	
Study Location	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
1. Claus Road and Scenic Drive	7:15	4:30	0.90	0.95	3%	2%
2. Mitchell Road/El Vista Avenue and SR 132	7:30	4:00	0.97	0.95	6%	4%
3. Garner Road /Claus Road and SR 132	7:15	4:00	0.89	0.94	6%	4%
4. Santa Fe Avenue and SR 132	7:30	4:00	0.91	0.97	5%	5%
5. Mitchell Road and Finch Road	7:30	4:45	0.93	0.98	7%	3%
6. Garner Road and Finch Road	7:15	4:30	0.89	0.91	10%	8%
7. Mitchell Road and Hatch Road	7:30	4:45	0.93	0.98	7%	2%
8. Faith Home Road and Hatch Road	7:15	4:15	0.95	0.97	3%	3%
9. Santa Fe Avenue and Hatch Road	7:15	4:15	0.96	0.95	3%	3%
10. Faith Home Road and Whitmore Avenue	7:15	4:00	0.86	0.87	3%	2%
11. Mitchell Road and Service Road	7:15	4:45	0.92	0.97	5%	3%
12. Faith Home Road and Service Road	7:15	4:15	0.89	0.96	2%	2%
13. Faith Home Road and Keyes Road	7:15	4:30	0.89	0.95	10%	6%
14. SR 99 SB Ramps and Keyes Road	7:00	4:00	0.91	0.97	12%	7%

15. SR 99 NB Ramps and Keyes Road	7:00	4:00	0.91	0.97	12%	7%
Northbound SR 99	7:15	4:15	0.87	0.98	8%	7%
Southbound SR 99	7:15	4:15	0.82	0.97	11%	8%

The Faith Home Road and Garner Road Expressway forecasting model was developed by combining the City of Modesto General Plan model (Modesto model) and the City of Ceres General Plan model (Ceres model). The Ceres and Modesto models were created from the Three-County (San Joaquin, Stanislaus, and Merced) regional travel demand model, developed by the StanCOG as part of the San Joaquin Valley Model Improvement Program (SJV MIP). The models were calibrated for a 2014 base year and provide forecasts for the buildout year 2040 and several interim years. Both General Plan models were refined using land use and network characteristics within the specific General Plan Area boundaries based on field observations, published reports, data compiled by others on the General Plan update team, and American Community Survey (ACS) data.

The land use for the cumulative year model was revised from the buildout level of land uses in the Cities of Ceres and Modesto that were used in the Ceres General Plan model. Market-based levels of land use for the design year of 2045 were developed from the control totals for Ceres, Modesto, and the remaining Stanislaus County area using the Stanislaus County Forecast Summary prepared by the Eberhardt School of Business, Center for Business and Policy Research.

Forecasting future traffic volumes is inherently uncertain. In addition to the assumptions for land use and roadway network changes, the following limitations are noted below.

- The effect of transportation network companies (such as Uber or Lyft) on trip making patterns is not included in the model.

- The effect of internet shopping on passenger or freight travel is not included.

Table 2.2-10 presents the planned separate roadway projects in the study area. For the travel demand forecasting model development, the separate projects are from the 2014 Stanislaus County RTP/SCS project list. Planned projects are assumed to be completed by the design year (2045).

Table 2.2-10. Planned Separate Projects from the 2014 RTP/SCS

Year	Location	Description
2014	Santa Fe Avenue and Hatch Road	Install traffic signal (SC33)
2020	SR 99 at Mitchell Road and Service Road	Construct new interchange, phase 1 (C08)

Year	Location	Description
	Whitmore Avenue, Mitchell Road to Faith Home Road	Widen from 2 to 4 lanes (C10)
	Santa Fe Avenue, Geer Road to Hatch Road	Widen to 3 lanes (SC55)
2024	Faith Home Road, Keyes Road to Hatch Road	Construct four-lane expressway (SC75-77)
	Garner Road, Finch Road to SR 132	Construct four-lane expressway (SC79)
	Hatch Road /Faith Home Road	Install traffic signal (C14)
2025	SR 99, Keyes Road to Taylor Road	Construct auxiliary lanes (RE02)
	Mitchell Road, River Road to Service Road	Widen to 6 lanes (C16)
2026	Santa Fe Avenue, Hatch Road to Tuolumne River	Widen to 3 lanes (SC56)
2028	SR 99, San Joaquin County Line to Mitchell Road	Install ramp metering improvements and ITS (RE06)
2030	Hatch Road, Herndon Road to Faith Home Road	Install complete streets improvements (C24)
2033	SR 99, Mitchell Road to Merced County Line	Install ramp metering improvements and ITS (RE07)
2035	Whitmore Avenue and Faith Home Road	Install new signal (C33)

Note: Project ID number from 2014 RTP/SCS provided in parentheses.

Source: Stanislaus County RTP/SCS

Table 2.2-11 presents the completed and planned separate roadway projects in the study area. Four construction projects were completed in the study area between 2017 and 2019. Subsequent to the preparation of the travel demand forecast volumes, the 2018 RTP/SCS was approved. The traffic operations analysis uses the 2018 RTP/SCS project list to determine the planned separate projects. Planned projects listed as completed by 2025 were assumed to be in place for the construction year (2025). All planned projects were assumed to be completed by the design year (2045).

Table 2.2-11. Completed Projects and Planned Separate Projects from the 2018 RTP/SCS

Year	Location	Description
2017	Santa Fe Avenue and Hatch Road	Installed traffic signal (Completed)
2018	Keyes Road and Faith Home Road	Installed traffic signal (Completed)
	Claus Road and Scenic Drive	Modified lane configurations (Completed)
	Mitchell Road and Service Road	Modified lane configurations (Completed)
2018	SR 99 and Keyes Road	Ramp signalization (S43)
2020	Whitmore Avenue, Mitchell Road to Faith Home Road	Widen from 2 to 4 lanes (C25)
2023	SR 99 Mitchell Road -Service Road	Construct new interchange, phase 1 (C23, C63)
2025	Hatch Road and Faith Home Road	Install traffic signal (C29)
	SR 99, Keyes Road to Taylor Road	Construct auxiliary lanes (CA06)
	Santa Fe Avenue, Geer Road to Hatch Road	Widen to 3 lanes (S63)
2028	Santa Fe Avenue, Hatch Road to Tuolumne River	Widen to 3 lanes (S64)
	SR 99, San Joaquin County Line to Mitchell Road	Install ramp metering (CA08)
2030	Mitchell Road, River Road to Service Road	Widen to 6 lanes (C31)
	Hatch Road, Herndon Road to Faith Home Road	Install complete streets improvements (C39)
2033	Mitchell Road, River Road to Service Road	Widen to 6 lanes (C31)
	Hatch Road, Herndon Road to Faith Home Road	Install complete streets improvements (C39)
2035	Whitmore Avenue and Faith Home Road	Install traffic signal (C48)
	Roeding Road and Faith Home Road	Install traffic signal (C34)

Other than shifting some construction dates, the main difference between the 2014 and 2018 RTP/SCS project lists is the removal of projects that would widen Garner Road, between SR 132 and Finch Road, and Faith Home Road, between Hatch Road and Keyes Road.

The study intersections were analyzed using the performance measures of intersection delay and level of service (LOS). LOS is a qualitative measure of traffic operating conditions that assigns a letter rating, from A (the best) to F (the worst). These ratings represent the

perspective of drivers and are an indication of the comfort and convenience associated with driving. The descriptions of letter ratings and the delay thresholds for signalized and unsignalized intersections are provided in Table 2.2-12. For unsignalized intersections with some movements uncontrolled, the intersection LOS is determined by the controlled movement with the highest delay.

Table 2.2-12. Intersection LOS Thresholds

LOS	Description	Delay	
		Signalized	Unsignalized
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10	≤ 10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10 to 20	> 10 to 15
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20 to 35	> 15 to 25
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35 to 55	> 25 to 35
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55 to 80	> 35 to 50
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80	> 50

The following key assumptions were included in the intersection operations analysis.

- As noted above, the SR 99 interchange at Keyes Road was modeled as a subnetwork with a single peak hour factor. The remaining study intersections were modeled as isolated intersections due to multiple intersections and driveways separating them from the other study intersections.

- The peak hour factors based on existing observed data were used for each study intersection (see Table 2.1-9). The minimum peak hour factor for future conditions was set to 0.92. Heavy vehicle percentages based on existing observed data were used for each study intersection (see Table 2.1-9). The minimum truck percentage for future conditions was 3 percent. These values were used for all future analysis years.

- For existing (2017) conditions, bicycle and pedestrian volumes were based on observed data. For future conditions, the minimum conflicting bicycle volume was set

to 2 bicycles per hour, and the minimum pedestrian volume was set to 5 pedestrians per hour.

The SR 99 freeway corridor was analyzed using the 2010 Highway Capacity Manual (HCM) procedures as applied in the HCS 2010 software program. As with intersections, LOS is used to describe the operating condition of freeway segments. Tables 2.2.13 and 2.2-14 lists the descriptions of the letter ratings and thresholds for each category for freeway and road segments.

Table 2.2-13. Freeway LOS Thresholds

LOS	Description	Delay	
		Signalized	Unsignalized
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver.	< 11	< 10
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 11 18	> 10 to 20
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 18 to 26	> 20 to 28
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 26 to 35	> 28 to 35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35 to 45	> 35 to 43
F	Represents a breakdown in flow.	> 45	> 43

The 2010 HCM method for freeway capacity analysis has the following limitations that may apply in one or more analysis scenario.

- The methodology does not account for the influence of a downstream bottleneck that causes queuing to extend into the study area.
- The methodology does not account for the influence of an upstream bottleneck that constrains traffic demand from reaching the study area.
- The capacity-enhancing effects of ramp metering and intelligent transportation system features (for example, electronic dynamic message signs) are not captured.

- The effect of the posted speed limit and enforcement practices on actual vehicle speed is not modeled.

- For future conditions, the freeway analysis used the existing peak hour factors and truck percentages (see Table 2.2-9), with the following exception. The minimum values of 0.92 peak hour factor and 3 percent heavy vehicles – the same minimum values used for the intersection analysis were applied.

Table 2.2-14. Roadway Segment LOS Thresholds

Classification	Lanes	Maximum Roadway Volume				
		A	B	C	D	E
Rural Major Collector	2	350	950	1,700	2,950	5,000
Urban/Industrial Major Collector	2	700	1,900	3,400	5,900	10,000
Urban/Rural Minor Arterial	4	3,000	5,000	7,000	8,400	10,000
Urban/Rural Principal Arterial	4	3,750	6,250	8,750	10,500	12,500
	6	4,500	7,500	10,500	12,600	15,000

The study roadway segments were assigned a roadway classification based on the number of lanes or the roadway classification as shown in the Road Circulation Diagram of the 2015 Stanislaus County General Plan.

The intersection, freeway segment, and roadway evaluation criteria were based on policies of the respective jurisdictions. The Stanislaus County General Plan has a LOS C threshold for intersections outside the city limits or sphere of influence of its cities. The first 14 study intersections are located in or near the Cities of Modesto, Ceres, and Hughson. These cities all have a LOS D threshold. The Department's SR 132 Transportation Concept Report lists LOS D as the concept LOS for the segments containing the three study intersections. The SR 99 Transportation Concept Report notes that D is the concept LOS for Interregional Road System highways in urban areas, and the SR 99 segments in Stanislaus County are listed as urban or urbanized. The LOS policies for each jurisdiction are listed and shown in section 2.2.8.1.2 above.

The Project TAR identified project impacts at intersections and freeway segments. Deficiencies for roadway segments were identified, but worsening conditions for roadway segments were not considered to be project impacts. A project impact must satisfy two conditions. First, the study location must operate at a worse LOS than the threshold identified above. Second, the study location under a build alternative must operate at a worse condition (higher delay for intersections or higher density for freeway segments) than the similar case for the No Build Alternative.

The Department has an additional evaluation criterion for off-ramp intersections. The queue length on the off-ramp approach should be contained on the ramp. A project impact occurs if

the build alternative off-ramp queue length extends to the freeway mainline or if the build alternative causes a queue length that extends to the mainline under the No Build Alternative to grow.

The roadway study area extends from Scenic Drive to the north, SR 99 to the south, Mitchell Road to the west, and Santa Fe Avenue to the east. The study locations are in Stanislaus County and the Cities of Ceres, Hughson, and Modesto. The major roadways are described below.

- Claus Road is a major north-south arterial that extends from SR 132 in Modesto north to SR 108 in Riverbank. In the study area, Claus Road has four lanes with signalized intersections at Scenic Drive, Creekwood Drive, and SR 132.

- SR 132 is an east-west state highway that connects Interstate-580 in the west to SR 49 in the east. In the study area, SR 132 varies from 2 to 4 lanes with signalized intersections at Mitchell Road and El Vista Avenue, Riverside Drive, Lincoln Avenue, Mariposa Road, McClure Road, Claus Road and Garner Road, Del Monte Foods Driveway, Frazine Road and Codoni Avenue, and Santa Fe Avenue.

- Mitchell Road is a major north-south arterial that extends from SR 132 in Modesto south to an interchange at SR 99 in Ceres. Mitchell Road has four lanes for most of its length, crosses the Tuolumne River near the Modesto Airport, and serves as a major commercial corridor in Ceres.

- Garner Road is a minor north-south arterial that extends from SR 132 in Modesto south to Finch Road. The two-lane street serves the adjacent industrial land uses.

- Santa Fe Avenue is a rural, mostly north-south, two-lane highway that connects the community of Empire at SR 132 to the City of Hughson and points south. The road crosses the Tuolumne River and runs adjacent to, and east of, the Burlington Northern Santa Fe Railroad.

- Finch Road is a minor east-west arterial that runs from Mitchell Road on the west to Codoni Avenue on the east. The industrial street has four lanes west of Mariposa Road and two lanes to the east.

- Hatch Road is a major east-west arterial that connects the of Ceres and Hughson. In the study area, Hatch Road can be roughly divided into an urban, four-lane section west of Mitchell Road and a rural two-lane section to the east.

- Faith Home Road is a rural north-south two-lane highway that runs from Hatch Road on the north to south of Keyes Road. It serves as the east border of Ceres between Hatch Road and Whitmore Avenue and has an overcrossing at SR 99 in the community of Keyes.

- Service Road is an east-west arterial that crosses the south side of Ceres and has an overcrossing at SR 99. In the study area, Service Road is an urban street west of Mitchell Road and a two-lane rural road to the east.

- SR 99 is a north-south state highway that serves primarily regional traffic. In the study area, SR 99 is a six-lane freeway with interchanges at Mitchell Road, Keyes Road, and Taylor Road.

- Keyes Road is an east-west rural, two-lane highway with an interchange at SR 99.

Intersection operations were analyzed for existing (2017) conditions under AM and PM peak hour conditions using the SimTraffic software (Table 2.2-15).

Table 2.2-15. Intersection Operations – Existing (2017) Conditions

Intersection	Control	LOS/ Delay[1]	
		AM	PM
1. Claus Road and Scenic Drive	Signal	B / 18	B / 19
2. Mitchell Road /El Vista Avenue and SR 132	Signal	**E / 62**	**E / 68**
3. Garner Road /Claus Road and SR 132	Signal	C / 29	C / 32
4. Santa Fe Avenue and SR 132	Signal	B / 16	B / 19
5. Mitchell Road and Finch Road	Signal	C / 23	B / 16
6. Garner Road and Finch Road	Side Street Stop	C / 20 (SB LT)	C / 16 (SB LT)
7. Mitchell Road and Hatch Road	Signal	D / 53	**E / 59**
8. Faith Home Road and Hatch Road	Side Street Stop	D / 29 (NB LT)	C / 17 (NB LT)
9. Santa Fe Avenue and Hatch Road	All Way Stop	D / 31	**E / 35**
10. Faith Home Road and Whitmore Avenue	All Way Stop	B / 11	B / 12
11. Mitchell Road and Service Road	Signal	D / 43	D / 51
12. Faith Home Road and Service Road	All Way Stop	A / 10	A / 10
13. Faith Home Road and Keyes Road	All Way Stop	C / 16	**E / 40**
14. SR 99 Southbound Ramps and Keyes Road	Side Street Stop	C / 21 (SB LT)	**F / 102 (SB LT)**
15. SR 99 Northbound Ramps and Keyes Road	Side Street Stop	**F / 63 (NB LT)**	**D / 28 (NB LT)**

Notes: Bold and underline font indicate that the LOS exceeds the threshold. For side street stop-controlled intersections, the worst movement is reported in parentheses.

[1] Delay is reported in seconds per vehicle.

Freeway operations were analyzed for existing (2017) conditions under AM and PM peak hour conditions. The freeway segments were analyzed using HCM methods as applied in the HCS 2010 software. Table 2.2-16 shows the freeway operations for SR 99 from south of Keyes Road to Mitchell Road.

Table 2.2-16. Freeway Operations – Existing (2017) Conditions

Freeway Segment	Type	LOS/ Density[1]	
		AM	PM
SR 99 Northbound: Taylor Road to Keyes Road	Basic	D / 29	C / 24
SR 99 Northbound: Keyes Road Off Ramp	Diverge	D / 34	D / 30
SR 99 Northbound: Keyes Road Off to On Ramp	Basic	D / 27	C / 22
SR 99 Northbound: Keyes Road On Ramp	Merge	D / 30	C / 25
SR 99 Northbound: Keyes Road to Mitchell Road	Basic	D / 30	C / 23
SR 99 Northbound: Mitchell Road Off Ramp	Diverge	D / 35	D / 31
SR 99 Southbound: Mitchell Road On Ramp	Merge	D / 28	D / 30
SR 99 Southbound: Mitchell Road to Keyes Road	Basic	C / 24	C / 26
SR 99 Southbound: Keyes Road Off Ramp	Diverge	D / 29	D / 31
SR 99 Southbound: Keyes Road Off to On Ramp	Basic	C / 22	C / 25
SR 99 Southbound: Keyes Road On Ramp	Merge	C / 27	D / 31
SR 99 Southbound: Keyes Road to Taylor Road	Basic	C / 26	D / 30

Notes: Bold and underline font indicates that the LOS exceeds the threshold.

1. Density is reported in vehicles per lane per mile.

Roadway operations were analyzed for existing (2017) conditions using the county's LOS criteria. Table 2.2-17 shows the roadway daily volume and LOS for the study locations.

Table 2.2-17. Roadway Operations – Existing (2017) Conditions

Roadway	Lanes	Classification	Daily Volume	LOS
1. Mitchell Road south of SR 132	4	Urban Principal Arterial	22,300	B
2. Garner Road south of SR 132	2	Industrial Major Collector	7,050	D
3. SR 132 west of Santa Fe Avenue	2	Rural Major Collector	18,710	**F**

Roadway	Lanes	Classification	Daily Volume	LOS
4. Santa Fe Avenue south of SR 132	2	Rural Major Collector	9,460	**E**
5. Mitchell Road north of Finch Road	4	Urban Principal Arterial	30,550	C
6. Garner Road north of Finch Road	2	Industrial Major Collector	9,170	D
7. Mitchell Road south of Finch Road	4	Urban Principal Arterial	45,370	**E**
8. Mitchell Road south of Hatch Road	4	Urban Principal Arterial[1]	32,720	C
9. Hatch Road west of Faith Home Road	2	Rural Major Collector	12,290	**F**
10. Faith Home Road south of Hatch Road	2	Rural Major Collector	3,510	D
11. Santa Fe Avenue south of Hatch Road	2	Rural Major Collector	7,560	**E**
12. Mitchell Road north of Service Road	4	Urban Principal Arterial[1]	28,960	C
13. Faith Home Road north of Service Road	2	Rural Major Collector	3,870	D
14. Faith Home Road north of Keyes Road	2	Rural Major Collector	3,670	D
15. Keyes Road west of SR 99	2	Rural Major Collector	9,580	**E**

Notes: Bold and underline font indicate that the LOS exceeds the threshold.

[1] Since the roadway is located in the City of Ceres, the Road Circulation Diagram in the Stanislaus County General Plan does not indicate the roadway classification. The Urban Principal Arterial designation was assigned based on current design features.

Table 2.2-18 shows collisions for the roadway segments that cross the Tuolumne River adjacent and parallel to the proposed Faith Home Road and Garner Road Expressway. Stanislaus County and the City of Modesto provided five years of collision data for the period from 2012 to 2016. The City of Ceres provided a collision history for Mitchell Road from the Tuolumne River to Hatch Road from January 2015 to September 2017. This 0.55-mile segment had 12 collisions with 1 injury-related collision.

Table 2.2-18. Collison History

Collison Type	Number of Collisions	
	Mitchell Road: Finch Road to Tuolumne River	**Santa Fe Avenue: SR 132 to Hatch Road**
Broadside	1	4
Head On	2	3
Hit Object	12	9
Overturn	3	1
Pedestrian/Bicycle	0	1
Rear End	10	10
Sideswipe	3	4
Other	1	2
Fatality	0	1
Injury	17	15
Total:	**32**	**34**

Using the 2010 AASHTO Highway Safety Manual, the number of collisions were predicted for existing (2017) conditions (Table 2.2-19). For Mitchell Road, the observed crash rate is 5.5 collisions per year when combining the five-year data from Modesto and Stanislaus County with the 33-month data from Ceres. The predicted collision rate is almost three times higher at 16.1 collisions per year. For Santa Fe Avenue, the observed crash rate for the five-year period from 2012 to 2016 was 6.8 collisions per year. The predicted crash rate is collisions, more than twice the observed rate. While the methodology appears to be poor at predicting current conditions, it can be used to compare the relative crash rates among alternatives.

Table 2.2-19. Predicted Collison Rate

Collision Type	Mitchell Road: Finch Road to Tuolumne River		Santa Fe Avenue: SR 132 to Hatch Road	
	Observed	**Predicted**	**Observed**	**Predicted**
Fatal and Injury	2.0	5.3	3.2	4.8
Property Damage Only	3.5	10.8	3.6	9.7
Total:	**5.5**	**16.1**	**6.8**	**14.5**

Freight System: The roadway system supports goods movement within the study area. SR 99 is the primary regional trucking route within Stanislaus County. The arterial network supports this backbone by providing access to local commercial and industrial areas. A key industrial area is the industrial park owned by the Beard Land Improvement Company, which is bounded by SR 132, Santa Fe Avenue, Tuolumne River, and the Modesto City/County Airport. SR 132 and Mitchell Road provide the main connections for truck travel to and from the industrial district. Vehicle classification counts were collected at five of the study roadway segments. The highest value of 25 percent heavy vehicles (buses and trucks with six or more tires) was measured on Keyes Road east of SR 99, a rural location with primarily agricultural traffic. In the Beard Land industrial park, Garner Road north of Finch Road had 13 percent trucks. The three other locations had 10 percent trucks on average.

On a peak hour basis, truck percentages are higher during the AM peak hour. The study intersections ranged from 2 to 12 percent trucks during the AM peak hour, with intersections near the Beard Land industrial park and Keyes Road having the highest values. During the PM peak hour, the truck percentages ranged from 2 to 8 percent.

The Modesto and Empire Traction Company (M&ET) serves as the short line railroad for the Beard Land industrial area. M&ET connects the Burlington Northern Santa Fe (BNSF) to the east and Union Pacific (UP) railroad line to the west and functions as an intermodal transfer facility to transfer goods between trains and trucks for further distribution. The BNSF line is adjacent to and west of Santa Fe Avenue and has grade crossings at SR 132 and Hatch Road. The UP line is adjacent to and west of SR 99 and its crossings at Faith Home Road and Keyes Road are grade-separated.

Transit System: Three transit agencies serve the study area. Their routes are listed below.

- Ceres Area Transit (CAT) provides two-way hourly weekday service on a route that follows Whitmore Avenue, Mitchell Road, and Hatch Road in the study area.

- Modesto Area Express (MAX) Route 39 provides one bus on a two-way weekday service during the AM and PM peak hours through the Beard Land industrial park along Tenaya Drive, Mitchell Road, Finch Road, Garner Road, and SR 132.

- Stanislaus Regional Transit Route 61 provides service every two hours on weekdays between Modesto and Waterford. In the study area, the route travels in a one-way loop eastbound along SR 132 towards Waterford and then westbound along Whitmore Avenue, Mitchell Road, and Hatch Road towards Ceres.

No bus routes currently travel Mitchell Road or Santa Fe Avenue over the Tuolumne River.

Bicycle System: The existing (2017) bicycle facilities are listed below.

- Bicycles can use the wide, paved shoulders that are provided on Claus Road north of SR 132 although the shoulders are not signed or striped as on-street bicycle lanes.

- On-street (Class II) bicycle lanes are provided on SR 132 between Riverside Drive and Claus Road and Garner Road intersection in Modesto.

- An off-street (Class I) trail exists along the south side of Hatch Road from west of Mitchell Road to Boothe Road, about 0.4 miles to the east.

- Similar to Claus Road, Mitchell Road has paved shoulders that are striped with a white edge line from Finch Road to the Tuolumne River that could be used by bicycles. North of Finch and south of the Tuolumne River bridge, a wide shoulder is provided without the edge line.

- On Santa Fe Avenue, no bicycle accommodations are provided between SR 132 and Hatch Road, and the bridge at the Tuolumne River does not have shoulders.

Peak hour volume for bicycles was highest at the Mitchell Road/El Vista Avenue and SR 132 intersection, with 7 during the AM peak hour and 6 during the PM peak hour. Bicycles were observed primarily at the SR 132 and Mitchell Road intersections. No bicycles were counted during the peak hours at the Garner Road and Finch Road intersection or the Faith Home Road and Hatch Road intersection.

Figure 3-4 of the 2013 StanCOG Non-Motorized Transportation Master Plan shows existing designated bikeways in the overall study area:

- Hatch Road west of Eastgate Boulevard is designated a Class 1 bike path

- A segment of Hatch Road east of Faith Home Road is designated a Class 3.5 bicycle route with wide shoulders.

- Boothe Road and segment Eastgate Boulevard, west of the Hatch Road-Faith Home Road intersection is designated a Class 2 bike lane.

- A segment of SR 132/ Yosemite Boulevard east and west of the Garner Road intersection is designated a Class 2 bike lane.

- In the outer portions of the overall study area various road segments in the Cities of Modesto and Ceres are designated Class 2 bike lane, Class 1 bike path, and Class 3 bike route.

Figure 2-2 of the 2013 StanCOG Non-Motorized Transportation Master Plan identifies County Wide Priority Bikeways and shows: a proposed Class 2 bike lane on Garner Road, a proposed Class 3 bicycle route on Finch west of the Garner Road intersection, and a first tier proposed Class 1 bike path on Hatch Road at the Faith Home Road intersection.

Pedestrian System: Sidewalks are provided in the urbanized part of the study area as noted below.

- The Claus Road and Scenic Drive intersection has sidewalks, but Claus Road does not have pedestrian facilities south to SR 132.

- SR 132 has a continuous sidewalk on its north side from Mitchell Road/El Vista Avenue through the Claus Road and Garner Road intersection.

- Mitchell Road has sidewalks on both sides from Finch Road south across the Tuolumne River bridge to Hatch Road. At Service Road, sidewalks exist on two of the four corners.

Peak hour volume for pedestrians was highest at Claus Road and Scenic Drive (6) and Mitchell Road and Hatch Road (5) during the AM peak hour. During the PM peak hour, Claus Road and Scenic Drive, Mitchell Road and El Vista Avenue and SR 132, and Mitchell Road and Hatch Road all had 13 pedestrians crossing the intersection. At Garner Road and Finch Road intersection, only 2 pedestrians were counted during the PM peak hour. No pedestrians were observed at the Faith Home Road and Hatch Road intersection.

2.2.8.3 Environmental Consequences

2.2.8.3.1 Build Alternative

Construction Year Forecasts (2025)

Table 2.2-20 compares the daily volumes for study roadways at the Tuolumne River under existing (2017) and construction year (2025) conditions. Compared to existing (2017) conditions, daily volume at the Tuolumne River in the study area is expected to grow by about 7,200 vehicles per day (13 percent) with the No Build Alternative with about two-thirds of the growth on Mitchell Road and about one-third on Santa Fe Avenue.

Table 2.2-20. Daily Volume at Tuolumne River – Construction Year (2025) Conditions

Existing		**Construction Year 2025**			**Change from No Build**	
Roadway	**2017**	**No Build**	**Phase 1**	**Phase 2**	**Phase 1**	**Phase 2**
Mitchell Road	45,370	50,240	34,620	32,790	-15,620	-17,450
Santa Fe Avenue	9,460	11,820	7,760	6,690	-4,060	-5,130
Faith Home Road/Garner Road	-	-	29,900	35,380	29,900	35,380
Total:	**54,820**	**62,060**	**72,280**	**74,860**	**10,220**	**12,800**

Construction of the two-lane Faith Home Road and Garner Road Expressway in Build Alternative Phase 1 would reduce daily volume on Mitchell Road by more than 15,000 vehicles per day and on Santa Fe Avenue by more than 4,000 vehicles per day. The two-lane bridge would carry about 30,000 vehicles per day resulting in an overall increase of about 10,000 vehicle per day (16 percent) compared to the No Build Alternative. Much of this increase would come from traffic diverting from bridges to the west at 9th Street, 7th Street, and SR 99.

Compared to the two-lane bridge, the four-lane bridge in Build Alternative Phase 2 would shift an additional 2,000 vehicles per day from Mitchell Road and 1,000 vehicles per day from Santa Fe Avenue, and the new bridge volume would increase by about 5,000 vehicles per day. The increase in volume at the Tuolumne River would be about 13,000 vehicles per day (21 percent) compared to the No Build Alternative.

Design Year Forecasts (2045)

Table 2.2-21 compares the daily volumes for study roadways at the Tuolumne River under existing (2017) and design year (2045) conditions. Compared to existing (2017) conditions, daily volume at the Tuolumne River in the study area would grow by 25,300 vehicles per day (46 percent) with the No Build Alternative, with about two-thirds of the growth on Mitchell Road and about one-third on Santa Fe Avenue.

Table 2.2-21. Daily Volume at Tuolumne River – Design Year (2045) Conditions

Existing		**Design Year 2045**			**Change from No Build**	
Roadway	**2017**	**No Build**	**Phase 1**	**Phase 2**	**Phase 1**	**Phase 2**
Mitchell Road	45,370	62,420	42,670	38,190	-19,750	-24,230
Santa Fe Avenue	9,460	17,700	11,900	8,930	-5,800	-8,770
Faith Home Road/Garner Road	-	-	43,670	58,480	43,670	58,480
Total:	**54,820**	**80,120**	**98,240**	**105,600**	**18,120**	**25,480**

Construction of the two-lane Faith Home Road and Garner Road Expressway in Phase 1 would reduce daily volume on Mitchell Road by almost 20,000 vehicles per day and on Santa Fe Avenue by almost 6,000 vehicles per day. The two-lane bridge would carry about 44,000 vehicles per day resulting in an increase of about 18,000 vehicle per day (23 percent) compared to the No Build Alternative.

Compared to the two-lane bridge, the four-lane bridge in Phase 2 would shift an additional 4,500 vehicles per day from Mitchell Road and 3,000 vehicles per day from Santa Fe

Avenue, and the new bridge volume would increase by about 15,000 vehicles per day. The increase in volume at the Tuolumne River would be about 25,000 vehicles per day (32 percent) compared to the No Build Alternative.

Design Year (2045) Performance Measures

To estimate the area-wide effect of the proposed Faith Home Road and Garner Road Expressway, the performance measures of vehicle miles of travel (VMT), vehicle hours of travel (VHT), and vehicle hours of delay (VHD) were calculated using the design year (2045) forecasting models. The changes in travel patterns would primarily occur over a small portion of the Three-County roadway network, so a sub-area was selected with the following boundaries: Briggsmore Avenue to the north, Carpenter Road to the west, Main Street (Turlock) to the south, and Albers Road/Geer Road to the east.

Table 2.2-22 shows the local area-wide performance measures on a daily basis. Compared to the base year model, the No Build Alternative would have 38 percent more VMT, 41 percent more VHT, and 54 percent more VHD. The Build Alternative would reduce VMT compared to the No Build Alternative. With the two-lane bridge (Phase 1), the VMT reduction occurs primarily because a shorter path would be provided by the new connection between Faith Home Road and Garner Road. The VMT reduction compared to the No Build Alternative is less with a four-lane bridge (Phase 2) because some drivers would divert to the new connection to take advantage of shorter peak-hour travel times even though the trip length would be longer.

Table 2.2-22. Area-wide Average Daily Performance Measures

Existing[1, 2]		**Design Year 2045**			**Change from No Build**	
Roadway	**2017**	**No Build**	**Phase 1**	**Phase 2**	**Phase 1**	**Phase 2**
Vehicle Miles of Travel (VMT)	3,954,149	5,452,722	5,435,886	5,448,848	-16,836	-3,874
Vehicle Hours of Travel (VHT)	87,769	124,021	121,728	120,944	-2,293	-3,077
Vehicle Hours of Delay (VHD)	2,446	3,760	3,381	3,129	-379	-631
Fuel Consumption (gallons)	159,441	219,868	219,189	219,712	-679	-156
Greenhouse Gas Emissions2 (pounds of CO2 equivalent)	3,826,596	5,276,827	5,260,535	5,273,079	-16,292	-3,749

[1.] Estimated using national average fuel economy of 24.8 miles per gallon (US EPA, 2015)

[2.] Estimated as 24 pounds of CO2 per gallon of fuel used

Induced Travel

Build Alternative Phases 1 and 2 would provide reduced travel time in the study area by providing a new connection between Finch Road and Hatch Road. The phenomenon where reduced travel time (or other travel cost reduction) leads to additional travel demand is called induced travel. The idea is that lower travel cost generates an increase in travel demand due to the following causes.

- The short-term responses to lower travel costs are summarized below.
- New vehicle trips that would otherwise would not be made
- Longer vehicle trips to more distant destinations
- Shifts from other modes to driving
- Shifts from one driving route to another

The longer-term responses to lower travel costs are changes in land use development patterns (these are often more dispersed, low density patterns that are auto dependent) and changes in overall growth.

In addition to route diversion, new demand may be created through changes in trip destinations, changes in travel mode, and changes in the time of day. Travel demand models can capture some, but not all, of these changes. In particular, travel demand models do not capture changes in land use development due to the reduced travel time.

Empirical data on induced travel bases the additional demand on the change in lane miles. The travel demand elasticity ranges from 0.10 to 0.60 for short-term effects, where the elasticity is calculated as the percent change in VMT divided by the percent change in lane miles. To calculate a rough estimate of the potential VMT changes due to induced travel, the existing VMT from Table 2.2-22 would suggest a construction year value of about 4,000,000 VMT in the study area, which has about 1,200 lane-miles. The Project would construct about 2 lane-miles under Build Alternative Phase 1 and about 4 lane-miles for Phase 2. The potential induced travel ranges from 700 to 4,000 VMT for Phase 1 and from 1,300 to 8,000 VMT for Phase 2.

Based on these empirical estimates, future VMT and traffic volumes on the Faith Home Road and Garner Road Expressway and connecting roadways could be higher than estimated by the travel demand model. However, the elasticity values were largely derived from research conducted on urban and suburban freeways where travel delays are more severe than in the study area, which is suburban to rural in character. Without the congested conditions, travel demand responses are expected to be dampened. Since trip generation rates of existing land uses are not constrained by congestion in the model area, they are not likely to change as a result of induced travel effects. Instead, trip lengths could increase. As a result, the model generated traffic volume estimates are reasonable for traffic operations analysis, but

the VMT estimates used for air quality, greenhouse gas, and energy impact analysis should acknowledge the potentially higher VMT levels.

Construction Year Conditions (2025)

Intersection Operations: Intersection operations were analyzed for construction year (2025) conditions during the AM and PM peak hours. Table 2.2-23 shows the intersection LOS and average delay for the AM and PM peak hours

Table 2.2-23. Intersection Operations – Construction Year Conditions

Intersection	Construction Year LOS/ Delay[1, 2]					
	No Build Alternative		Build Alternative			
			Phase 1		Phase 2	
	AM	PM	AM	PM	AM	PM
1. Claus Road and Scenic Drive	D / 43	C / 25	**E / 60**	C / 30	D / 51	C / 34
2. Mitchell Road /El Vista Avenue and SR 132	**E / 62**	**E / 64**	**E / 55**	**E / 66**	**E / 62**	**E / 64**
3. Garner Road /Claus Road and SR 132	C / 29	C / 33	D / 40	D / 35	C / 33	D / 35
4. Santa Fe Avenue and SR 132	B / 13	B / 15	B / 10	B / 13	B / 10	B / 12
5. Mitchell Road and Finch Road	C / 31	B / 19	C / 24	B / 19	B / 20	B / 18
6. Garner Road and Finch Road	D / 27 (SB LT)	C / 22 (SB LT)	C / 31	C / 27	D / 43	D / 44
7. Mitchell Road and Hatch Road	**E / 68**	**E / 63**	D / 48	D / 51	D / 46	D / 45
8. Faith Home Road and Hatch Road	A / 10	A / 9	C / 28	C / 30	D / 41	D / 51
9. Santa Fe Avenue and Hatch Road	C / 26	C / 25	C / 21	B / 20	C / 23	B / 17
10. Faith Home Road and Whitmore Avenue	B / 14	B / 15	**F / 106**	**F / 109**	**F / 115**	**F / 109**
11. Mitchell Road and Service Road	C / 32	C / 32	D / 35	D / 36	C / 33	D / 37
12. Faith Home Road and Service Road	B / 11	B / 11	**F / 85**	**F / 129**	**F / 113**	**F / 158**
13. Faith Home Road and Keyes Road	C / 27	C / 29	**D / 51**	**D / 51**	**E / 64**	**E / 59**

14. SR 99 SB Ramps and Keyes Road	B / 14	C / 27	B / 14	C / 21	B / 14	C / 23
15. SR 99 NB Ramps and Keyes Road	C / 21	B / 14	C / 25	C / 21	C / 28	C / 24

[1] Bold and underline font indicate that the LOS exceeds the threshold. For side street stop-controlled intersections, the worst movement is reported in parentheses.

[2] Delay is reported in seconds per vehicle.

The following study intersections would exceed the acceptable LOS under construction year (2025) conditions:

- Claus Road and Scenic Drive (LOS E, Build Alternative Phase 1 AM)
- Mitchell Road/El Vista Avenue and SR 132 (LOS E)
- Mitchell Road and Hatch Road (LOS E, No Build Alternative)
- Faith Home Road and Whitmore Avenue (LOS F, Build Alternative Phases 1 and 2)
- Faith Home Road and Whitmore Avenue (LOS F, Build Alternative Phases 1 and 2)
- Faith Home Road and Keyes Road (LOS D, Build Alternative Phase 1 and LOS E, Phase 2)

The following study intersections would have project impacts because the LOS would worsen from an acceptable to an unacceptable level or the delay would increase at an intersection with an unacceptable LOS.

- Claus Road and Scenic Drive (Build Alternative Phase 1, AM)
- Mitchell Road/El Vista Avenue and SR 132 (Build Alternative Phase 1, PM)
- Faith Home Road and Whitmore Avenue (Build Alternative Phases 1 and 2)
- Faith Home Road and Service Road (Build Alternative Phases 1 and 2)
- Faith Home Road and Keyes Road (Build Alternative Phases 1 and 2)

Although it is not a study intersection, the Faith Home Road and Roeding Road intersection, which lies between the Whitmore Avenue and Service Road intersections, would experience a similar level of traffic volume growth on Faith Home Road as at the other intersections. As a result, this intersection is also identified as having a project impact.

The following study intersections would have Project impacts because the LOS would worsen from an acceptable to an unacceptable level or the delay would increase at an intersection with an unacceptable LOS. Although not analyzed in the 2018 TAR, the Faith

Home Road and Roeding Road intersection, which is located between Whitmore Avenue and Service Road, would likely need similar improvements to provide acceptable traffic operations

- Mitchell Road/El Vista Avenue and SR 132 (Build Alternative, Phases 1 and 2, AM)
- Faith Home Road and Whitmore Avenue (Build Alternative, Phases 1 and 2, AM and PM)
- Faith Home Road and Service Road (Build Alternative, Phase 2, AM)
- Faith Home Road and Keyes Road (Build Alternative, Phases 1 and 2, PM)
- Faith Home Road and Roeding Road

The following improvements are proposed to mitigate the LOS impact at the affected intersections. The feasibility of these measures and consistency with planned projects are discussed after each proposed measure.

Claus Road and Scenic Drive Intersection: Add a second northbound left turn lane: The intersection was recently modified to accommodate a Class IV bicycle facility on the east side of Claus Road. With this modification, the second northbound left turn lane was removed. To add the lane back in would only require modifying of the intersection's south leg. The 2018 RTP/SCS project list does not contain a project that covers this location.

Mitchell Road/El Vista Avenue and SR 132 Intersection: Add a second northbound left turn lane. The right-of-way for Mitchell Road south of the railroad crossing is wide enough to accommodate widening to provide a second northbound left turn lane. However, the crossing and related signals and gates would need to be relocated as part of the widening. SR 132 already has two lanes to accept the proposed dual northbound left turn lanes. The 2018 RTP/SCS project list does not contain a project that covers this location.

Faith Home Road and Whitmore Avenue Intersection: Install a traffic signal, and add left turn pocket lanes of 200 feet on all approaches except for the eastbound approach (which is assumed to be widened under a separate planned project). The proposed widening would affect residential and agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list contains a project to widen Whitmore Avenue to four lanes that is scheduled to be constructed in 2020. The east end of the project is Faith Home Road. A future project to signalize the intersection is scheduled for 2035. Based on this analysis, the planned project should include the addition of left turn pocket lanes. However, the previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four- lane expressway by 2024. Such a project would likely have provided acceptable operations at this location.

Faith Home Road and Roeding Road Intersection: Install a traffic signal, and add left turn pocket lanes of 200 feet on all approaches. The proposed widening would likely affect agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list contains a

project to signalize the intersection that is scheduled for 2035. However, the previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024. Such a project would likely have provided acceptable operations at this location.

Faith Home Road and Service Road Intersection: Install a traffic signal, and add left turn pocket lanes of 200 feet on all approaches. The proposed widening would likely affect residential and agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list does not contain a project that covers this location. However, the previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024. Such a project would likely have provided acceptable operations at this location.

Faith Home Road and Keyes Road Intersection: Add a second southbound left turn lane, a westbound right turn pocket lane of 300 feet, a second eastbound through/right pocket lane of 250 feet, and a northbound left turn pocket lane of 200 feet. A project was recently completed to widen and signalize this intersection. The proposed widening would likely affect commercial and agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list does not contain a project that covers this location. However, the previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four- lane expressway by 2024. Such a project would likely have provided acceptable operations at this location.

With the proposed mitigations, the Claus Road and Scenic Drive intersection and the Faith Home Road intersections at Whitmore Avenue, Service Road, and Keyes Road would operate with LOS D or better conditions (Table 2.2-24). Although not analyzed, signalization of the Faith Home Road and Roeding Road intersection would be expected to provide similar intersection operations. The Mitchell Road/El Vista Avenue and SR 132 intersection would have a delay less than the No Build Alternative, but LOS E conditions would be maintained.

Table 2.2-24. Intersection Operations – Construction Year (2025) Conditions with Mitigation

Intersection [1, 2]	**No Build Alternative**		**Build Alt. Phase 1 Mitigated**		**Build Alt. Phase 2 Mitigated**	
	AM	**PM**	**AM**	**PM**	**AM**	**PM**
1. Claus Road/Scenic Drive	D / 43	C / 25	D / 45	-	-	-
2. Mitchell Road /El Vista Avenue/SR 132	**E / 62**	**E / 64**	-	**E / 60**	-	-
10. Faith Home Road /Whitmore Avenue	B / 14	B / 15	D / 46	D / 39	D / 48	D / 47
12. Faith Home Road /Service Road	B / 11	B / 11	C / 27	C / 28	D / 36	C / 34
13. Faith Home Road /Keyes Road	C / 27	C / 29	C / 34	C / 24	C / 34	C / 27

[1]Bold and underline font indicate that the LOS exceeds the threshold.

[2]. Delay is reported in seconds per vehicle.

At the bridge intersections, the queue length would exceed the storage length under the No Build Alternative only for the eastbound left turn at Garner Road and Finch Road. Under Build Alternative Phase 1, the queues would exceed the storage by less than 25 feet for the eastbound right, westbound left, and the northbound right at Garner Road and Finch Road, but the queues at Faith Home Road and Hatch Road would be contained by the provided storage length.

With the higher volumes under Build Alternative Phase 2, queues at both bridge intersections would exceed the storage lengths for several movements. At Garner Road and Finch Road, the eastbound approach would have a relatively long queue at 1,108 feet during the PM peak hour on this minor street approach, but the queue would not reach an upstream intersection. On the northbound and southbound approaches, the highest queues of about 650 and 725 feet would occur during the AM peak hour. Due to right-of-way constraints, no changes to the northbound and southbound storage lengths are recommended. Extending the westbound left turn storage length by 75 feet would contain the maximum queue during the AM peak hour. At Faith Home Road and Hatch Road, the westbound right turn during the AM peak hour and the eastbound left turn during the PM peak hour would exceed the storage.

At the ramp terminal intersections, the off-ramp queues would be contained on the ramps. For the southbound off-ramp, the highest queue length would be less than 150 feet. For the northbound off-ramp, the maximum queue length would be 513 feet under Phase 2 during the AM peak hour. The westbound left turn at the SR 99 Southbound Ramps intersection would exceed the storage during the PM peak hour under all alternatives. Given the short queue length for the eastbound left turn movement at the SR 99 Northbound Ramps, restriping the center lane to shift storage length between the movements should be considered. At the SR 99 Northbound Ramps intersection, the westbound approach would queue back to the adjacent intersection at Golden State Boulevard during the AM peak hour under Phase 2.

Freeway Operations: Freeway operations were analyzed for construction year (2025) conditions under AM and PM peak hour conditions. Table 2.2-25 shows the freeway LOS and density for the study segments. Compared to existing conditions, density would increase with the increasing volumes resulting in mostly LOS C or D conditions.

The following freeway segment would have unacceptable LOS E conditions.

- Mitchell Road Northbound Off Ramp (No Build and Alternative 2, AM)

The unacceptable LOS E at the Mitchell Road Northbound Off Ramp would improve to LOS D under Phase 1. Under Phase 2, the LOS would remain at E, but the density would be lower. The improved conditions with the build alternative would be due to a shift in traffic volume from SR 99 to Faith Home Road.

No freeway segments would have project impacts under construction year conditions.

Table 2.2-25. Freeway Operations – Construction Year (2025) Conditions

SR 99 Segment	Type	No Build Alternative		Build Alternative[1, 2]			
				Phase 1		Phase 2	
		AM	PM	AM	PM	AM	PM
NB: Taylor Road to Keyes Road	Weave	D / 28	C / 25	D / 30	C / 26	D / 30	C / 26
NB: Keyes Road Off to On Ramp	Basic	D / 28	C / 24	D / 27	C / 23	D / 28	C / 23
NB: Keyes Road On Ramp	Merge	D / 31	C / 27	D / 31	C / 27	D / 31	C / 26
NB: Keyes Road to Mitchell Road	Basic	D / 32	C / 25	D / 31	C / 25	D / 31	C / 25
NB: Mitchell Road Off Ramp	Diverge	**E / 36**	D / 32	D / 35	D / 32	**E / 35**	D / 32
SB: Mitchell Road On Ramp	Merge	D / 29	D / 33	D / 29	D / 33	D / 29	D / 33
SB: Mitchell Road to Keyes Road	Basic	C / 25	D / 31	C / 24	D / 30	C / 24	D / 30
SB: Keyes Road Off Ramp	Diverge	D / 30	D / 34	D / 30	D / 33	D / 29	D / 33
SB: Keyes Road Off to On Ramp	Basic	C / 24	D / 29	C / 23	D / 29	C / 23	D / 29
SB: Keyes Road to Taylor Road	Weave	C / 22	D / 28	C / 23	D / 30	C / 23	D / 30

[1] Bold and underline font indicate that the LOS exceeds the threshold.

[2] Delay is reported in seconds per vehicle.

Roadway Operations: Roadway operations were analyzed for construction year (2025) conditions. No study roadway segments are assumed to be widened by 2025. For the Build Alternative, the Faith Home Road and Garner Road Expressway is classified as an Urban Principal Arterial with two lanes under Phase 1 and four lanes under Phase 2. Table 2.2-26 shows the roadway daily volume and LOS for the study locations (see the appendix for detailed analysis results).

Table 2.2-26. Roadway Operations – Construction Year (2025) Conditions

Roadway	Daily Volume/ LOS[1]		
	No Build Alternative	Build Alternative	
		Phase 1	Phase 2
1. Mitchell Road south of SR 132	22,800 / B	24,790 / B	24,850 / B
2. Garner Road south of SR 132	10,880 / D	**23,630 / F**	**26,290 / F**
3. SR 132 west of Santa Fe Avenue	**20,560 / F**	**18,950 / F**	**18,420 / F**
4. Santa Fe Avenue south of SR 132	**11,820 / F**	**7,760 / E**	**6,690 / E**
5. Mitchell Road north of Finch Road	31,920 / C	30,630 / C	30,300 / C
6. Garner Road north of Finch Road	**11,840 / E**	**26,730 / F**	**29,830 / F**

Roadway	Daily Volume/ LOS[1]		
	No Build Alternative	Build Alternative	
		Phase 1	Phase 2
7. Mitchell Road south of Finch Road	**50,240 / F**	34,620 / C	32,790 / C
8. Mitchell Road south of Hatch Road	36,160 / D	28,940 / C	28,080 / C
9. Hatch Road west of Faith Home Road	**12,750 / F**	**18,710 / F**	**19,900 / F**
10. Faith Home Road south of Hatch Road	3,310 / C	**18,510 / F**	**20,420 / F**
11. Santa Fe Avenue south of Hatch Road	**9,490 / E**	**7,920 / E**	**7,620 / E**
12. Mitchell Road north of Service Road	32,170 / C	30,210 / C	29,870 / C
13. Faith Home Road north of Service Road	3,650 / D	**11,930 / F**	**12,990 / F**
14. Faith Home Road north of Keyes Road	4,700 / D	**8,660 / E**	**9,070 / E**
15. Keyes Road west of SR 99	**11,210 / F**	**13,240 / F**	**13,450 / F**
16. Faith Home Road north of Hatch Road	-	**29,900 / F**	35,380 / D

[1] Bold and underline font indicate that the LOS exceeds the threshold.

The following roadway segments would exceed the acceptable LOS:

- Garner Road south of SR 132 (LOS F, Build Alternative Phases 1 and 2)
- SR 132 west of Santa Fe Avenue (LOS F)
- Santa Fe Avenue south of SR 132 (LOS F, No Build Alternative and LOS E, Build Alternative Phases 1 and 2)
- Garner Road north of Finch Road (LOS E, No Build Alternative and LOS F, Build Alternative Phases 1 and 2)
- Mitchell Road south of Finch Road (LOS F, No Build Alternative)
- Hatch Road west of Faith Home Road (LOS F)
- Faith Home Road south of Hatch Road (LOS F, Build Alternative Phases 1 and 2)
- Santa Fe Avenue south of Hatch Road (LOS E)
- Faith Home Road north of Service Road (LOS F, Build Alternative Phases 1 and 2)
- Faith Home Road north of Keyes Road (LOS E, Build Alternative Phases 1 and 2)

- Keyes Road west of SR 99 (LOS F)
- Faith Home Road north of Hatch Road (LOS F, Build Alternative Phase 1)

Four of the six locations that have unacceptable LOS under the No Build Alternative would be improved under the build alternatives. Santa Fe Avenue south of SR 132 would improve from LOS F to E, and Mitchell Road south of Finch Road would improve from LOS F to C. The other two roadways would maintain the same LOS, but the daily volume would be reduced.

The proposed roadway for the Faith Home Road and Garner Road Expressway would have LOS F with two lanes under Phase 1. Providing four lanes under Phase 2 would result in acceptable LOS D conditions. Once funding is secured, the County will complete environmental review of Phase 2 and schedule the construction of the Phase 2 improvements.

Roadway Safety: Using the forecasted daily volume, predicted collisions were calculated for construction year (2025) conditions under the project alternatives as shown in Table 2.2.27. For Mitchell Road and Santa Fe Avenue, the volume diversion to the Faith Home Road and Garner Road Expressway would provide a reduction in the predicted collisions under the Build Alternative. Since Phase 2 (Four-Lane Bridge) would shift more traffic, the reduction in collisions would be greatest with this alternative. The proposed new roadway would have a similar collision rate under the build alternatives because the higher volume in Phase 2 would offset the increased safety provided by the four-lane cross section. Despite this, Phase 2 would have a slightly lower crash rate due to fewer property damage only collisions compared to Phase 1.

Table 2.2-27. Predicted Annual Collisions – Construction Year (2025) Conditions

Roadway	No Build Alternative			Build Alternatives[2]					
				Phase 1			Phase 2		
	F+I	PDO	Total	F+I	PDO	Total	F+I	PDO	Total
Mitchell Road: Finch Road to Hatch Road	5.6[1]	11.3[1]	16.9[1]	5.0	10.2	15.2	4.9	9.9	14.8
Faith Home Road/Garner Road: Finch Road to Hatch Road	-	-	-	5.1	11.7	16.8	5.1	11.1	16.2
Santa Fe Avenue: SR 132 to Hatch Road	5.2	10.5	15.7	4.7	9.3	13.9	4.4	8.9	13.3

[1] Daily volume is out of the range for collision prediction model.

[2]Notes: F+I is fatality and injury collisions, and PDO is property damage only collisions.

Design Year Conditions (2045)

Intersection Operations: Intersection operations were analyzed for design year (2045) conditions during the AM and PM peak hours. Table 2.2-28 shows the intersection LOS and average delay for the AM and PM peak hours.

Table 2.2-28. Intersection Operations – Design Year (2045) Conditions

Intersection	Design Year LOS/ Delay[1, 2]					
	No Build Alternative		Build Alternative			
			Phase 1		Phase 2	
	AM	PM	AM	PM	AM	PM
1. Claus Road and Scenic Drive	**E / 70**	**E / 69**	**E / 78**	**E / 79**	**F / 82**	**E / 78**
2. Mitchell Road /El Vista Avenue and SR 132	**F / 96**	**F / 124**	**F / 137**	**F / 133**	**F / 138**	**F / 106**
3. Garner Road/Claus Road and SR 132	**F / 88**	D / 44	**F / 149**	D / 48	**F / 134**	**F / 122**
4. Santa Fe Avenue and SR 132	C / 26	C / 25	C / 21	C / 22	B / 19	B / 18
5. Mitchell Road and Finch Road	D / 52	D / 35	D / 52	C / 20	C / 26	B / 19
6. Garner Road and Finch Road	**F / 80** (SB LT)	**F / 75** (SB LT)	C / 29	C / 26	D / 55	D / 47
7. Mitchell Road and Hatch Road	D / 49	D / 51	D / 51	D / 49	D / 55	D / 43
8. Faith Home Road and Hatch Road	A / 10	B / 11	D / 41	D / 35	D / 45	D / 52
9. Santa Fe Avenue and Hatch Road	**E / 74**	D / 41	D / 38	C / 28	C / 26	C / 23
10. Faith Home Road and Whitmore Avenue	C / 20	B / 17	**E / 63**	**F / 86**	**E / 71**	**E / 79**
11. Mitchell Road and Service Road	D / 40	D / 40	D / 44	D / 42	D / 40	D / 44
12. Faith Home Road and Service Road	C / 16	B / 15	**F / 155**	**F / 167**	**F / 157**	**F / 167**
13. Faith Home Road and Keyes Road	**F / 98**	**E / 63**	**F / 123**	**F / 102**	**F / 124**	**F / 115**
14. SR 99 SB Ramps and Keyes Road	C / 21	**E / 56**	B / 20	**D / 39**	B / 19	C / 28
15. SR 99 NB Ramps and Keyes Road	**D / 38**	C / 23	**E / 70**	**E / 65**	**F / 83**	**F / 84**

[1] Bold and underline font indicate that the LOS exceeds the threshold.

[2] Delay is reported in seconds per vehicle

The following study intersections would exceed the acceptable LOS under design year (2045) conditions:

- Claus Road and Scenic Drive (LOS E/F)

- Mitchell Road/El Vista Avenue and SR 132 (LOS F)
- Garner Road/Claus Road and SR 132 (LOS F, AM and Build Alternative Phase 2 PM)
- Garner Road and Finch Road (LOS F, No Build Alternative)
- Santa Fe Avenue and Hatch Road (LOS E, No Build Alternative AM)
- Faith Home Road and Whitmore Road (LOS E/F, Build Alternative Phases 1 and 2)
- Faith Home Road and Service Road (LOS F, Build Alternative Phases 1 and 2)
- Faith Home Road and Keyes Road (LOS E/F)
- SR 99 Southbound Ramps and Keyes Road (LOS D/E, No Build Alternative and Build Alternative Phase 1 PM)
- SR 99 Northbound Ramps and Keyes Road (LOS D, No Build Alternative AM; LOS E, Build Alternative Phase 1; and LOS F, Build Alternative Phase 2)

Two intersections that have unacceptable operations under the No Build Alternative would be improved to acceptable operations under the Build Alternative. The LOS F conditions at Garner Road and Finch Road would be improved with the proposed signal in the Build Alternative. The AM peak hour LOS E at Santa Fe Avenue/Hatch Road would improve to LOS D or better due to the shift of volume from Santa Fe Avenue to the new roadway. Additionally, the PM peak hour LOS E at SR 99 Southbound Ramps and Keyes Road would improve to LOS D or better due to the shift of southbound volume from SR 99 to Faith Home Road.

The following study intersections would have project impacts because the LOS would worsen from an acceptable to an unacceptable level or the delay would increase at an intersection with an unacceptable LOS.

- Claus Road and Scenic Drive (Build Alternative Phases 1 and 2)
- Mitchell Road/El Vista Avenue and SR 132 (Build Alternative Phases 1 and 2)
- Garner Road/Claus Road and SR 132 (Build Alternative Phase 1 and Build Alternative Phase 2, AM)
- Faith Home Road and Whitmore Avenue (Build Alternative Phases 1 and 2)
- Faith Home Road and Service Road (Build Alternative Phases 1 and 2)
- Faith Home Road and Keyes Road (Build Alternative Phases 1 and 2)
- SR 99 Northbound Ramps and Keyes Road (Build Alternative Phases 1 and 2)

The following improvements are proposed to mitigate the LOS impact at the affected intersections. The feasibility of these measures and consistency with planned projects are also discussed.

Claus Road and Scenic Drive Intersection: Add a second northbound left turn lane, and – for Phase 2 only – convert the southbound right turn lane to a shared through/right-turn lane. The intersection was recently modified to accommodate a Class IV bicycle facility on the east side of Claus Road. With this modification, the second northbound left turn lane was removed. To add the lane back in would only require modifying of the intersection's south leg. For the addition of the third southbound lane for Phase 2, the free eastbound right turn movement would become controlled by the signal, but both the north and south legs of the intersection can accommodate the third southbound lane without widening. The 2018 RTP/SCS project list does not contain a project that covers this location.

Mitchell Road/El Vista Avenue and SR 132 Intersection: Add a second northbound left turn lane, a southbound right turn pocket lane of 150 feet, and a westbound right turn pocket lane of 150 feet. The right-of-way for Mitchell Road south of the railroad crossing is wide enough to accommodate widening to provide a second northbound left turn lane. However, the crossing and related signals and gates would need to be relocated as part of the widening. SR 132 has two lanes to accept the proposed dual northbound left turn lanes. The right turn pocket lanes would likely require right-of-way from parcels on the northwest and northeast corners of the intersection, affecting their parking lots. The 2018 RTP/SCS project list does not contain a project that covers this location.

Garner Road/Claus Road and SR 132 Intersection: Add a third southbound through lane and a southbound right turn pocket lane of 200 feet. This intersection modification can be completed on the north leg through restriping of the existing pavement. On the south leg, Garner Road, south of the railroad crossing, would need to be widened to accept the third lane. The previous 2014 RTP/SCS included a project to widen Garner Road from SR 132 to Finch Road to a four-lane expressway by 2024. Such a project would likely have provided acceptable operations at this location.

Faith Home Road and Whitmore Avenue Intersection: Add northbound and southbound through/right turn pocket lanes of 200 feet. The proposed widening would affect residential and agricultural parcels at the intersection. The previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024. Such a project would likely have provided acceptable operations at this location.

Faith Home Road and Service Road Intersection: Install a traffic signal, add a left turn pocket lane of 200 feet on all approaches, and add northbound and southbound through/right turn pocket lanes of 200 feet. The proposed widening would likely affect residential and agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list does not contain a project that covers this location. However, the previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024. Such a project would likely have provided acceptable operations at this location.

Faith Home Road and Keyes Road Intersection: Add a second southbound left turn lane, a westbound right turn pocket lane of 300 feet, an eastbound through/right turn pocket lane of 250 feet, and a northbound left turn pocket lane of 200 feet. A project was recently completed to widen and signalize this intersection. The proposed widening would likely affect commercial and agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list does not contain a project that covers this location. However, the previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024. Such a project would likely have provided acceptable operations at this location.

SR 99 Southbound Ramps and Keyes Road Intersection: Add a southbound right turn pocket lane of 250 feet. The 2018 RTP/SCS project list contains a project that would signalize this intersection by 2018. This project should be modified to include a southbound right turn pocket of at least 250 feet.

SR 99 Northbound Ramps and Keyes Road Intersection: Add a northbound right turn pocket lane of 500 feet and a westbound right turn pocket lane of 250 feet. The 2018 RTP/SCS project list contains a project that would signalize this intersection by 2018. This project should be modified to include a northbound right turn pocket of at least 500 feet and a westbound right turn pocket of at least 250 feet.

As shown in Table 2.2-29, the proposed mitigations at three intersections would reduce the average intersection delay to less than the delay under the No Build Alternative, but the LOS would remain unacceptable. For Phase 1, Claus Road/Scenic Drive would stay at LOS E, and Mitchell Road/El Vista Avenue/SR 132 would improve to LOS E during the AM peak hour and remain at LOS F during the PM peak hour. Faith Home Road/Keyes Road would improve to LOS E during the AM peak hour and D during the PM peak hour, one LOS grade better than the No Build Alternative. For Phase 2, the changes would be similar except that Faith Home Road/Keyes Road would be LOS E for both peak hours. At the remaining study intersections, the mitigations would provide acceptable LOS D (for Garner Road and Faith Home Road intersections) or C (for SR 99/Keyes Road) conditions.

Table 2.2-29. Intersection Operations – Design Year (2045) Conditions with Mitigation

Intersection	No Build Alternative		Build Alternatives[1,2]			
			Phase 1 Mitigated		Phase 2 Mitigated	
	AM	PM	AM	PM	AM	PM
1. Claus Road and Scenic Drive	**E / 70**	**E / 69**	**E / 62**	**E / 69**	**E / 60**	**E / 58**
2. Mitchell Road /El Vista Avenue and SR 132	**F / 96**	**F / 124**	**E / 57**	**F / 95**	**E / 55**	-
3. Garner Road /Claus Road and SR 132	**F / 88**	D / 44	D / 54	D / 45	D / 47	D / 52

10. Faith Home Road and Whitmore Avenue	C / 20	B / 17	C / 30	C / 33	D / 45	D / 41
12. Faith Home Road and Service Road	C / 16	B / 15	C / 33	C / 27	D / 36	D / 39
13. Faith Home Road and Keyes Road	**F / 98**	**E / 63**	**E / 60**	**D / 39**	**E / 62**	**E / 61**
14. SR 99 SB Ramps and Keyes Road	C / 21	**E / 56**	B / 20	C / 32	C / 21	C / 29
15. SR 99 NB Ramps and Keyes Road	**D / 38**	C / 23	B / 19	C / 22	C / 21	C / 24

[1] Bold and underline font indicate that the LOS exceeds the threshold.

[2] Delay is reported in seconds per vehicle.

The queue lengths would be contained within the storage lengths for both the No Build Alternative and Build Alternative Phase 1. Under Phase 2, the queues would exceed the storage of the eastbound right, westbound left, northbound left and right, and southbound left at Garner Road and Finch Road. The southbound approach would have a relatively long queue at 1,238 feet during the AM peak hour, which would extend through an M&ET railroad crossing, but not to the upstream intersection at Leckron Road. On the eastbound and northbound approaches, queues for the through lanes would block access to the turn pockets for some portions of the signal cycle. As a result, extending the turn pockets would provide only minimal delay reductions. At Faith Home Road and Hatch Road, the westbound, northbound, and southbound through movements have queues that are longer than the turn pocket storage. This results in a queue that is longer than the pocket length since turning vehicles are blocked from entering the pocket.

The westbound left turn at the SR 99 and Keyes Road Southbound Ramps intersection would exceed the storage under all alternatives. However, the queue would not extend to the upstream intersection at the SR 99 Northbound Ramps. The eastbound approach queue would be greater than 1,500 feet under the No Build Alternative but shorter under the Build Alternative. At the adjacent ramp intersection, the westbound approach would queue back to the adjacent intersection at Golden State Boulevard during the AM peak hour under the No Build Alternative and during both peak hours under the Build Alternative. The southbound off-ramp queue would be 200 feet or less in all scenarios, but the northbound off-ramp queue would exceed the ramp length under Phases 1 and 2 during both peak hours resulting in a project impact.

The proposed mitigation described above to reduce delay at the SR 99 and Keyes Road intersections would also reduce queue lengths. With the addition of the northbound right-turn pocket lane, the queue length would be reduced to less than 500 feet during the peak hours. Eastbound and westbound approach queue lengths would have similar reductions.

Freeway Operations: Freeway operations were analyzed for design year (2045) conditions under AM and PM peak hour conditions. Table 2.2-30 shows the freeway LOS

and density for the study segments. Compared to construction year conditions, density would increase with the increasing volumes resulting in mostly LOS E or F conditions. The following freeway segments would have unacceptable conditions.

- Northbound SR 99 during the AM peak hour
- Mitchell Road Northbound Off Ramp (No Build Alternative and Build Alternative Phase 2, PM)
- Southbound SR 99 except for Keyes Road to Taylor Road during the AM peak hour
- Southbound SR 99 during the PM peak hour

Table 2.2-30. Freeway Operations – Design Year (2045) Conditions

SR 99 Segment	Type	LOS/ Density[1, 2]					
		No Build Alternative		Build Alternative			
				Phase 1		Phase 2	
		AM	PM	AM	PM	AM	PM
NB: Taylor Road to Keyes Road	Weave	**E / 37**	D / 32	**E / 40**	D / 33	**E / 41**	D / 33
NB: Keyes Road Off to On Ramp	Basic	**E / 42**	D / 30	**E / 41**	D / 29	**E / 41**	D / 29
NB: Keyes Road On Ramp	Merge	**F / 39**	D / 31	**F / 38**	D / 31	**F / 38**	D / 30
NB: Keyes Road to Mitchell Road	Basic	**F / 47**	D / 32	**F / 46**	D / 31	**F / 46**	D / 31
NB: Mitchell Road Off Ramp	Diverge	**F / 43**	**E / 36**	**F / 43**	D / 35	**F / 42**	**E / 35**
SB: Mitchell Road On Ramp	Merge	**E / 38**	**F / 41**	**E / 37**	**F / 41**	**E / 38**	**F / 40**
SB: Mitchell Road to Keyes Road	Basic	**E / 40**	**F / 48**	**E / 39**	**F / 48**	**E / 40**	**F / 47**
SB: Keyes Road Off Ramp	Diverge	**E / 38**	**F / 43**	**E / 37**	**F / 43**	**E / 38**	**F / 42**
SB: Keyes Road Off to On Ramp	Basic	**E / 38**	**E / 45**	**E / 37**	**F / 45**	**E / 37**	**E / 45**
SB: Keyes Road to Taylor Road	Weave	D / 32	**E / 38**	D / 32	**E / 39**	D / 33	**E / 38**

[1] Bold and underline font indicate that the LOS exceeds the threshold.

[2] Density is reported in vehicles per lane per mile

The Build Alternative would shift volume from the SR 99 mainline to Faith Home Road, so the density is usually lower than under the No Build Alternative. Under Phase 1, the Mitchell Road Northbound Off Ramp would improve from LOS E to D. Phase 2 would have LOS E, but the density would be less than under the No Build Alternative.

The following freeway segments would have a project impact because the LOS would worsen from an acceptable to an unacceptable level or the density or volume-to-capacity ratio would increase at a location with an unacceptable LOS.

- Taylor Road to Keyes Road Northbound (Build Alternatives, Phase 1 and 2, AM)

- Keyes Road to Taylor Road Southbound (Build Alternative, Phase 1, PM)

In the northbound direction, the higher Keyes Road off-ramp volume causes the increase in density due to vehicles shifting from SR 99 to Faith Home Road under both Build Alternatives, Phase 1 and 2. To facilitate exiting traffic, a second off-ramp lane could be provided at Keyes Road. With this increase in capacity, the AM peak hour density would be reduced to 37 vehicles per lane per mile under Build Alternatives, Phase 1 and 2. The Highway Design Manual requires second off-ramp lane when the peak hour volume is greater than 1,500 vehicles per hour.

In the southbound direction, the weaving segment from Keyes Road to Taylor Road would already include a two-lane off-ramp to Taylor Road because the forecasted volume would be greater than 1,500 vehicles per hour. Installing a ramp meter for the Keyes Road southbound on-ramp would improve freeway operations during peak period conditions. The HCM methodology does not account for the operational benefits for ramp metering, so the density reduction was not calculated.

Roadway Operations: Roadway operations were analyzed for design year (2045) conditions. The following changes to the study area roadways are assumed as part of planned projects assumed to be completed by 2045.

- Mitchell Road was widened to six lanes from River Road to Service Road.

- Hatch Road was widened to four lanes from Herndon Road to Faith Home Road and reclassified as an Urban Principal Arterial.

In addition, the Faith Home Road and Garner Road Expressway roadway is classified as an Urban Principal Arterial with two lanes under Build Alternative, Phase 1 and four lanes under Build Alternative, Phase 2. Table 2.2-31 shows the roadway daily volume and LOS for the study locations.

Table 2.2-31. Roadway Operations – Design Year (2045) Conditions

Roadway	**Daily Volume/ LOS[1]**		
	No Build Alternative	**Build Alternative**	
		Phase 1	**Phase 2**
Mitchell Road south of SR 132	24,040 / B	26,020 / C	26,030 / C
Garner Road south of SR 132	**20,450 / F**	**43,660 / F**	**52,640 / F**
SR 132 west of Santa Fe Avenue	**25,180 / F**	**22,430 / F**	**21,120 / F**
Santa Fe Avenue south of SR 132	**17,700 / F**	**11,900 / F**	**8,930 / E**
Mitchell Road north of Finch Road	35,340 / D	34,550 / C	33,280 / C

Roadway	Daily Volume/ LOS[1]		
	No Build Alternative	Build Alternative	
		Phase 1	Phase 2
Garner Road north of Finch Road	**18,520 / E**	**46,100 / F**	**55,970 / F**
Mitchell Road south of Finch Road	**62,420 / F**	**42,670 / E**	38,190 / D
Mitchell Road south of Hatch Road	44,770 / B	33,590 / B	31,730 / B
Hatch Road west of Faith Home Road	13,890 / A	28,380 / C	31,850 / C
Faith Home Road south of Hatch Road	2,780 / C	**26,260 / F**	**31,660 / F**
Santa Fe Avenue south of Hatch Road	**14,310 / F**	**11,730 / F**	**10,740 / F**
Mitchell Road north of Service Road	40,210 / B	35,990 / B	35,170 / B
Faith Home Road north of Service Road	3,100 / A	**15,690 / F**	**18,920 / F**
Faith Home Road north of Keyes Road	**7,270 / E**	**13,420 / F**	**14,570 / F**
Keyes Road west of SR 99	**15,270 / F**	**17,580 / F**	**17,970 / F**
Faith Home Road north of Hatch Road	-	**43,670 / F**	**58,480 / F**

[1.] Bold and underline font indicate that the LOS exceeds the threshold.

The following roadway segments would exceed the acceptable LOS:

- Garner Road south of SR 132 (LOS F)
- SR 132 west of Santa Fe Avenue (LOS F)
- Santa Fe Avenue south of SR 132 (LOS F, No Build Alternative and Build Alternative Phase 1; LOS E, Build Alternative Phase 2)
- Garner Road north of Finch Road (LOS E, No Build Alternative; LOS F, Build Alternative Phases 1 and 2)
- Mitchell Road south of Finch Road (LOS F, No Build Alternative and LOS E, Build Alternative Phase 1)
- Faith Home Road south of Hatch Road (LOS F, Build Alternative Phases 1 and 2)
- Santa Fe Avenue south of Hatch Road (LOS F)
- Faith Home Road north of Service Road (LOS F, Build Alternative Phases 1 and 2)
- Faith Home Road north of Keyes Road (LOS E, No Build Alternative; LOS F Build Alternatives Phase 1 and 2)

- Keyes Road west of SR 99 (LOS F)

Four of the eight locations that have unacceptable LOS under the No Build Alternative would be improved under the Build Alternative. Santa Fe Avenue south of SR 132 would improve from LOS F to E under Phase 2, and Mitchell Road south of Finch Road would improve from LOS F to E under Phase 1 and to D under Phase 2. The other two roadways would maintain the same LOS, but the daily volume would be reduced.

Under the Build Alternative, two study locations would worsen from acceptable LOS C to unacceptable LOS F: Faith Home Road south of Hatch Road and north of Service Road. For two roadway segments, unacceptable LOS E conditions would worsen to LOS F. At four other study locations, the LOS F conditions under the No Build Alternative would remain and the daily volume would increase.

The proposed roadway for the Faith Home Road and Garner Road Expressway would have LOS F under the Build Alternative. However, the demand for the two-lane roadway in Phase 1 would be about 75 percent over the roadway capacity, while the demand for the four-lane roadway in Phase 2 would be only about 17 percent over capacity.

Roadway Safety: Using the forecasted daily volume, predicted collisions were calculated for design year (2045) conditions under the project alternatives shown in Table 2.2.32. For Mitchell Road and Santa Fe Avenue, the volume diversion to the Faith Home Road and Garner Road Expressway would reduce the predicted collisions under the build alternatives. Since Build Alternative, Phase 2 would shift more traffic, the reduction in collisions would be greatest. The proposed roadway would have similar collisions under the Build Alternative, Phase 1 and 2, but the higher volume in Alternative 2 would offset the increased safety provided by the four-lane cross section resulting in 1.3 more predicted collisions per year.

Table 2.2-32. Predicted Annual Collisions – Design Year (2045) Conditions

Roadway	No Build Alternative			Build Alternatives[2]					
				Phase 1			Phase 2		
	F+I	PDO	Total	F+I	PDO	Total	F+I	PDO	Total
Mitchell Road: Finch Road to Hatch Road	6.1[1]	12.3[1]	18.5[1]	5.6	11.2	16.8	5.3	10.7	16.0
Faith Home Road /Garner Road: Finch Road to Hatch Road	-	-	-	8.7[1]	19.6[1]	28.3[1]	9.4	20.1	29.6
Santa Fe Avenue: SR 132 to Hatch Road	5.9[1]	11.9[1]	17.8[1]	5.4	10.9	16.3	5.1	10.1	15.2

[1] Daily volume is out of the range for collision prediction model.

[2]Notes: F+I is fatality and injury collisions, and PDO is property damage only collisions.

Freight System: The proposed roadway would provide a critical link in the freight movement network in Stanislaus County. The Claus Road and Garner Road and Faith Home Road corridor would provide a key north-south regional connection so that goods can be moved through the Stanislaus County. Additionally, the proposed roadway would provide another access point for the Beard Land Industrial District and the intermodal transfer facility operated by M&ET. The travel time to and from SR 99 to the south would be reduced for parcels near Garner Road and to the east. The new connection would provide congestion relief on the existing access roads.

Transit System: No transit routes are planned to use the proposed Faith Home Road and Garner Road Expressway. However, the roadway would be designed to accommodate tractor-trailer vehicles, and therefore, would accommodate buses if a transit line is designated in the future.

Bicycle System: The Stanislaus Council of Governments Non-Motorized Transportation Master Plan (StanCOG 2013) includes the following proposed bicycle facilities in the project area.

- Garner Road from Finch Road to SR 132: Class 2, Bicycle Lanes
- Finch Road from Mitchell Road to Garner Road: Class 3, Bicycle Route
- Hatch Road from Eastgate Boulevard to Gilbert Road: Class 1, Path

The Hatch Road Class 1 Path is a first-tier, high-priority facility. The RTP includes this improvement as a Tier I project scheduled for 2025.

The proposed design for the Garner Road and Finch Road intersection would accommodate the planned bicycle facilities on Garner Road and Finch Road. Although not included in the Non-Motorized Transportation Master Plan, the proposed roadway should be designed to accommodate bicycle traffic. One option is to extend the planned Class 2 Bicycle Lanes on Garner Road south to Hatch Road. Another option would be to provide a Class 3.5 Bikeway, which are wide shoulders in rural areas for bicycles and pedestrians.

The proposed design for the Faith Home Road/Hatch Road intersection would need to accommodate the planned path for bicycles and pedestrians that would run along the south side of the TID canal that is adjacent to Hatch Road. Given the planned approach width on Faith Home Road at Hatch Road, bicycles and pedestrians should be directed to cross Faith Home Road at the Hatch Road signalized intersection. The realigned Faith Home Road would need to accommodate bicycle and pedestrian traffic between Hatch Road and path on the south side of the canal. The existing Faith Home Road canal bridge could be used for path traffic on the west side of Faith Home Road.

Pedestrian System: The StanCog Non-Motorized Transportation Master Plan (StanCog 2013) shows low pedestrian demand at the Garner Road and Finch Road and Faith Home Road and Hatch Road intersections due to the low density of employment and residences. Nevertheless, pedestrians would need to be accommodated at the proposed signalized

intersections at Garner Road and Finch Road and Faith Home Road and Hatch Road. Pedestrian signals are recommended given the long crossing distances so that the signal timing can be more efficient. In particular, pedestrians using the planned Hatch Road path would need to be accommodated at the Faith Home Road and Hatch Road intersection as described above.

For the proposed roadway, pedestrians should be accommodated for emergency access and for the recreational/scenic draw of the river crossing. Minimum width sidewalks should be provided similar to the Mitchell Road bridge at the Tuolumne River. The raised curb provided by the sidewalk would provide improved safety and comfort since pedestrians would otherwise be walking in the roadway adjacent to the bridge railing. A wide shoulder, or Class 3.5 Bikeway, that would accommodate bicycles and pedestrians could be used for the roadway south of the bridge.

Project Impacts Summary: A project impact occurs where; the LOS threshold is exceeded and the conditions are worse than the No Build Alternative. The project impacts to the roadway system described above are listed below by alternative.

Build Alternative Phase 1 (Two-Lane Bridge), Construction Year (2025) Conditions

- Intersections
    - Claus Road and Scenic Drive (AM)
    - Mitchell Road/El Vista Avenue and SR 132 (PM)
    - Faith Home Road and Whitmore Avenue (AM and PM)
    - Faith Home Road and Roeding Road (AM and PM)
    - Faith Home Road and Service Road (AM and PM)
    - Faith Home Road and Keyes Road (AM and PM)

Build Alternative Phase 2 (Four-Lane Bridge), Construction Year (2025) Conditions

- Intersections
    - Faith Home Road and Whitmore Avenue (AM and PM)
    - Faith Home Road and Roeding Road (AM and PM)
    - Faith Home Road and Service Road (AM and PM)
    - Faith Home Road and Keyes Road (AM and PM)

Build Alternative Phase 1 (Two-Lane Bridge), Design Year (2045) Conditions

- Intersections
    - Claus Road and Scenic Drive (AM and PM)
    - Mitchell Road/El Vista Avenue and SR 132 (AM and PM)
    - Garner Road/Claus Road and SR 132 (AM and PM)
    - Faith Home Road and Whitmore Avenue (AM and PM)

- Faith Home Road and Service Road (AM and PM)
- Faith Home Road and Keyes Road (AM and PM)
- SR 99 Northbound Ramps and Keyes Road (AM and PM)

- Freeway Segments
  - Northbound SR 99: Taylor Road to Keyes Road (AM)
  - Southbound SR 99: Keyes Road to Taylor Road (PM)

Build Alternative Phase 2 (Four-Lane Bridge), Design Year (2045) Conditions

- Intersections
  - Claus Road and Scenic Drive (AM and PM)
  - Mitchell Road/El Vista Avenue and SR 132 (AM)
  - Garner Road/Claus Road and SR 132 (AM and PM)
  - Faith Home Road and Whitmore Avenue (AM and PM)
  - Faith Home Road and Service Road (AM and PM)
  - Faith Home Road and Keyes Road (AM and PM)
  - SR 99 Northbound Ramps and Keyes Road (AM and PM)
- Freeway Segments
  - Northbound SR 99: Taylor Road to Keyes Road (AM)

2.2.8.3.2 No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements. Traffic delay and LOS would continue to degrade for local intersections, freeway segments, and roadways.

2.2.8.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following measures would reduce project impacts.

Measure TRAFFIC-1

- **Claus Road and Scenic Drive Intersection:** The impact under construction year (2025) conditions could be mitigated by providing a second northbound left turn lane. For design year (2045) conditions, the mitigation measure for Build Alternative Phase 1 is the same as under construction year (2025) conditions. For Phase 2, the design year (2045) mitigation measure should include converting the southbound right turn lane to a shared through/right turn lane.

  The intersection was recently modified to accommodate a Class IV bicycle facility on the east side of Claus Road. With this modification, the second northbound left turn lane was removed. To add the lane back in would only require modifying of the intersection's south leg. For the addition of the third southbound lane for Phase 2,

the free eastbound right turn movement would become controlled by the signal, but both the north and south legs of the intersection can accommodate the third southbound lane without widening. The 2018 RTP/SCS project list does not contain a project that covers this location. Modifying the intersection should be listed as a future candidate project for the next RTP/SCS project list.

- **Mitchell Road/El Vista Avenue and SR 132 Intersection:** The impact under construction year (2025) conditions could be mitigated by providing a second northbound left turn lane. For design year (2045) conditions, the impact could be mitigated by providing a second northbound left turn lane, a southbound right turn pocket lane of 150 feet and a westbound right turn pocket lane of 150 feet.

  The right-of-way for Mitchell Road south of the railroad crossing is wide enough to accommodate widening to provide a second northbound left turn lane. However, the crossing and related signals and gates would need to be relocated as part of the widening. SR 132 has two lanes to accept the proposed dual northbound left turn lanes. The right turn pocket lanes would likely require right-of-way from parcels on the northwest and northeast corners of the intersection, affecting their parking lots. The 2018 RTP/SCS project list does not contain a project that covers this location. Modifying the intersection should be listed as a future candidate project for the next RTP/SCS project list.

- **Garner Road/Claus Road and SR 132 Intersection:** The impact under design year (2045) conditions could be mitigated by providing a third southbound through lane and matching receiving lane and a southbound right turn pocket lane of 200 feet.

  This intersection modification can be completed on the north leg through restriping of the existing pavement. On the south leg, Garner Road, south of the railroad crossing, would need to be widened to accept the third lane. The previous 2014 RTP/SCS included a project to widen Garner Road from SR 132 to Finch Road to a four-lane expressway by 2024. Such a project would likely have provided acceptable operations at this location. Modifying the intersection should be listed as a future candidate project for the next RTP/SCS project list.

- **Faith Home Road and Whitmore Avenue Intersection:** The impact under construction year (2025) conditions could be mitigated by installing a traffic signal and providing left turn pocket lanes of 200 feet on the northbound, southbound and eastbound approaches. For design year (2045) conditions, the impact could be mitigated by providing through/right turn pocket lanes of 200 feet on the northbound and southbound approaches with matching receiving lanes.

  The proposed widening would affect residential and agricultural parcels at the intersection. The 2018 RTP/SCS project list contains a project to widen Whitmore Avenue to four lanes from Mitchell Road to Faith Home Road that is scheduled to be constructed in 2020. Based on this analysis, the planned project should include signalizing the intersection and adding left turn pocket lanes. The 2018 RTP/SCS project list contains a separate project to signalize the intersection by 2035. Based

on this analysis, the planned project should include widening the north and south legs to provide the second through lane. The previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024.

- **Faith Home Road and Roeding Road Intersection:** The impact under construction year (2025) conditions could be mitigated by installing a traffic signal and adding left turn pocket lanes of 200 feet on all approaches. For design year (2045) conditions, the impact could be mitigated by providing through/right turn pocket lanes of 200 feet on the northbound and southbound approaches with matching receiving lanes.

  The proposed widening would likely affect agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list contains a project to signalize the intersection that is scheduled for 2035. Based on this analysis, the planned project should include the addition of left turn pocket lanes and widening the north and south legs to provide the second through lane. The previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024. Such a project would likely have provided acceptable operations at this location.

- **Faith Home Road and Service Road Intersection:** The impact under construction year (2025) conditions could be mitigated by installing a traffic signal and adding left turn pocket lanes of 200 feet on all approaches. For design year (2045) conditions, the mitigation measure should also include providing through/right turn pocket lanes of 200 feet on the northbound and southbound approaches with matching receiving lanes.

  The proposed widening would likely affect residential and agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list does not contain a project that covers this location. The previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024. Installing a traffic signal should be listed as a future candidate project for the next RTP/SCS project list.

- **Faith Home Road and Keyes Road Intersection:** The impact under construction year (2025) conditions could be mitigated by providing a second southbound left turn lane and matching receiving lane, a westbound right turn pocket lane of 300 feet, a second eastbound through/right turn pocket lane of 250 feet, and a northbound left turn pocket lane of 200 feet. For design year (2045) conditions, the mitigation measure would be the same as for construction year (2025) conditions.

  A project was recently completed to widen and signalize this intersection. The proposed widening would likely affect commercial and agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list does not contain a project that covers this location. However, the previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway

by 2024. Modifying the intersection should be listed as a future candidate project for the next RTP/SCS project list.

- **SR 99 Southbound Ramps and Keyes Road Intersection:** The secondary impact under design year (2045) conditions (due to the mitigation measure suggested for the SR 99 Northbound Ramps/Keyes Road intersection) could be mitigated by providing a southbound right turn pocket lane of 250 feet.

  The 2018 RTP/SCS project list contains a project that would signalize this intersection by 2018. This project should be modified to include a southbound right turn pocket of at least 250 feet. Based on this analysis, the planned project should include the addition of a southbound right turn pocket lane.

- **SR 99 Northbound Ramps and Keyes Road Intersection:** The impact under design year (2045) conditions could be mitigated by providing a northbound right-turn pocket lane of 500 feet and a westbound right- turn pocket lane of 250 feet.

  The 2018 RTP/SCS project list contains a project that would signalize this intersection by 2018 (not yet completed). This project should be modified to include a northbound right turn pocket of at least 500 feet and a westbound right turn pocket of at least 250 feet. Based on this analysis, the planned project should include the addition of northbound and westbound right turn pocket lanes.

- **Northbound SR 99: Taylor Road to Keyes Road:** The impact under design year (2045) conditions could be mitigated by adding a second off-ramp lane to Keyes Road (even though the off-ramp volume would not meet the threshold for a two-lane off-ramp).

  The 2018 RTP/SCS project list contains a project that would add auxiliary lanes between Keyes Road and Taylor Road by 2025. Based on this analysis, the planned project should include a two- lane northbound off-ramp to Keyes Road.

- **Southbound SR 99: Keyes Road to Taylor Road:** Operations could be improved by installing a ramp meter on the southbound on-ramp at Keyes Road.

  The 2018 RTP/SCS project list contains a project that would add auxiliary lanes between Keyes Road and Taylor Road by 2025. The planned project is recommended to include a ramp meter for the southbound on-ramp from Keyes Road.

Measure TRAFFIC-2 (Traffic Management Plan (TMP))

- Prepare a TMP for project construction. A TMP is a program of activities for alleviating or minimizing work-related traffic delays by applying traditional traffic handling practices and innovative strategies including public awareness campaigns, motorist information, demand management, incident management, system

management, construction methods and staging, and alternate route planning. Implementation of the measures in the TMP would reduce the temporary access and circulation impacts of the project. TMP strategies also strive to reduce overall duration of work activities where appropriate. Typical components of a TMP can include measures such as the implementation of staging, traffic handling, and detour plans; restricting construction work to certain days and/or hours to minimize impacts to traffic and pedestrians; coordination with other construction projects to avoid conflicts; and the use of portable changeable message signs to inform the public of construction activities. In addition, the TMP would include the following measures:

  - Any emergency service agency whose ability to respond to incidents will be affected by any lane closure must be notified prior to that closure.

  - Work will be coordinated with the local busing system (including school buses and public systems) to minimize impacts on their bus schedules.

  - The lead agency will provide information to residents and businesses before and during project work that may represent a negative impact on commerce and travel surrounding the zone of construction.

- During the design stage coordinate with M&ET Railroad to develop an agreement outlining the schedule for and steps needed to tie existing rails to the proposed realignment over the new Grade Separation Undercrossing.

- The construction contract will require the contractor to maintain driveway access at all times during construction.

2.2.9 Visual/ Aesthetics

2.2.9.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically (emphasis added) and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA), in its implementation of NEPA (23 USC 109[h]), directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state “with…enjoyment of aesthetic, natural, scenic and historic environmental qualities” (CA Public Resources Code [PRC] Section 21001[b]).

2.2.9.2 Affected Environment

Primary information sources for this section include the Project's, Visual Impact Assessment Report (VIA, April 2020).

The project location and setting provides for the context for determining the type of changes to the existing visual environment. The proposed Project is located in central Stanislaus County east of the Cities of Modesto and Ceres. The landscape is characterized by industrial zoned parcels (currently being farmed) in the north end of the Project terminating at the Beard Industrial District. The land use within the project corridor is primarily urban coupled with a mixture of commercial, industrial, agricultural, and some residential land use. The project corridor is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance.

No scenic resource have been identified within the project corridor. The Project is not located within a designated State Scenic Highway segment.

Visual resources of the project setting are defined and identified below by assessing visual character and visual quality in the project corridor. Resource change is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project corridor before and after the construction of the proposed project.

2.2.9.3 Environmental Consequences

2.2.9.3.1 Build Alternative

The Project would result in a complete two-lane facility. The improvements to a full four-lane facility are funding and need dependent and are not currently scheduled. The full four-lane expressway facility (Phase 2) would be constructed in the future. Once funding is secured, the County will complete environmental review of Phase 2 and schedule the construction of the Phase 2 improvements. Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. The following project renderings (Figures 2.2-8 through 2.2-15) show before and after images of the Project area.

Figure 2.2-8. Aerial view looking south before improvements.

Figure 2.2-9. Aerial view looking south after improvements.

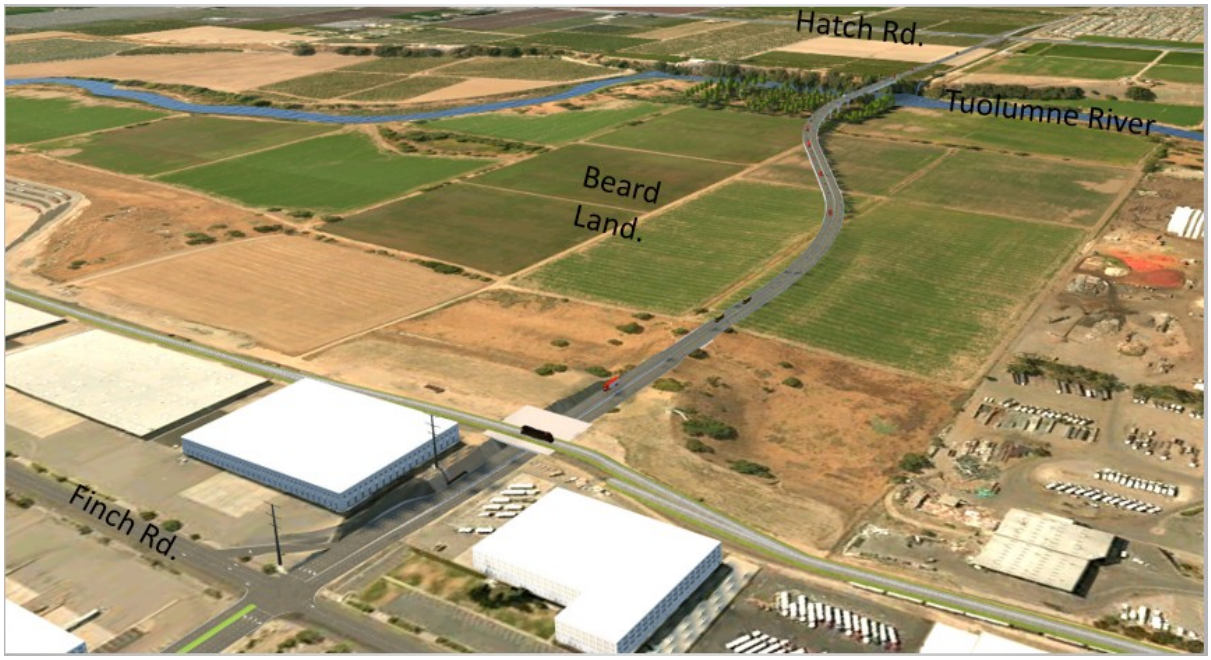

Figure 2.2-10. Tuolumne River looking northeast before improvements

Figure 2.2-11. Rendering from Tuolumne River looking northeast after improvements.

Figure 2.2-12. View from above Tuolumne River looking east before improvements.

Figure 2.2-13. Rendering of Tuolumne River looking east after Improvements

Figure 2.2-14. View from Mitchell Road Bridge looking east after improvements.

Figure 2.2-15. View from Santa Fe Road Bridge looking west after improvements. The railroad bridge obstructs the view west.

The Project would not substantially alter the current visual character of the area from existing driver vantage points. Therefore, the visual character of the proposed Project would be compatible with the existing visual character of the corridor.

Where applicable, removal of exotic plant species and revegetation with native plants would be utilized to help restore the site to a more natural condition, making it more consistent with the indigenous aesthetic of the area.

The primary impact would be where the project crosses the Tuolumne River. To reduce the impact, the bridge crossing the river would use haunched girders to minimize its depth. Also, the foundations would be located at either bank to avoid a permanent column within the ordinary low water mark of the main river channel. For the anticipated future widening, an aesthetic type of barrier may be used that could include openings to further reduce the impact that the full depth (top of barrier to bottom of bridge girder) may have. In addition, this type of barrier provides a more pleasant experience for drivers on the bridge.

Within the existing corridor, the intersections at Faith Home Road and Hatch Road and Garner Road and Finch Road would be expanded and signalized to accommodate the increased traffic generated by the project. As previously discussed, these improvements include the addition of standard traffic signals, signs, added asphalt and striping. The visual quality of the existing corridor would not be substantially altered by the proposed project. The Project would aim to minimize the impact and/or removal of existing natural resources within the project limits. Therefore, resource change (i.e. changes to visual resources as measured by changes in visual character and visual quality) would be low.

Neighbors (people with views to the road) and highway users (people with views from the road) would not be affected by the proposed Project. The proposed Tuolumne River bridge and the causeway structures would be visible from private open fields and farmlands and/or small boat vessels navigating the Tuolumne River, both of which are generally inaccessible to the general traveling public. The nearest existing river crossings at Mitchell Road and Santa Fe Avenue are both approximately one mile from the proposed project location. However, the Project site is not clearly visible from each of these existing crossing vantage points. Therefore, no element of the project would substantially change the overall aesthetic characteristic as seen from drivers at each location.

The view of the project from the existing golf course, located approximately 0.5 mile west of the proposed alignment would change. However, many of the proposed project elements would be obstructed by existing trees located between the golf course and the Project location.

In addition to the aforementioned existing intersection improvements and project improvements seen from vantage points along Mitchell Road and Santa Fe Road, the proposed M&ET railroad undercrossing would be visible from existing Finch Road. The Project, however, would not alter views from existing residential properties located southwest of the existing Faith Home Road and Hatch Road intersection. In summary, it is anticipated that the average response of all viewer groups would be low based on the project elements identified.

Review of the project site and plans indicate that the proposed project would not result in substantial adverse impacts to the visual environment as seen by the general public from existing travel way vantage points. Furthermore, this review indicates that the project would not adversely affect any "Designated Scenic Resource" as defined by CEQA statutes or guidelines, or by The Department policy.

2.2.9.3.2 No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements and therefore would not directly or indirectly impact visual or aesthetic resources.

2.2.9.3.3 Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following measures would reduce Project impacts.

Measure AES-1 (Design Treatments)

- Where applicable, revegetation with native plants will be utilized to help restore the site to a more natural condition.

- The bridge design will use haunched (arch like shape along the bottom of the bridge) girders to minimize its depth.

- The bridge foundations will be located at either bank of the Tuolumne River to avoid permanent columns within the ordinary low water mark of main river channel. Two piers will be located between the ordinary low and ordinary high waters marks along the south bank.

- For the anticipated future widening, an aesthetic type of barrier will be used that could include openings to further reduce the impact that the full depth (top of barrier to bottom of bridge girder) may have.

2.2.10 Cultural Resources

2.2.10.1 Regulatory Setting

The term “cultural resources,” as used in this document, refers to the “built environment” (e.g., structures, bridges, railroads, water conveyance systems, etc.), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including “historic properties,” “historic sites,” “historical resources,” and “tribal cultural resources.” Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects

of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the Federal Highway Administration (FHWA), the ACHP, the California State Historic Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the ACHP's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA's responsibilities under the PA have been assigned to the Department as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California Public Resources Code (PRC) section 5024.1 established the California Register of Historical Resources (CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term "tribal cultural resources" to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in PRC section 21083.2.

PRC section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires the Department to inventory state-owned structures in its rights-of-way.

2.2.10.2 Affected Environment

Primary information sources for this section include the Project's, Historic Property Survey Report (HPSR), Historic Resource Evaluation Report (HRER), and Archeological Survey Report (ASR). The report purpose, methods, and findings area summarized below

ASR: The purpose of the ASR is to identify cultural resources in the Project area of potential effects (APE). In accordance with Section 106 PA Stipulation VIII.A, the archaeological APE was established by Caltrans Professionally Qualified Staff (PQS) in June 2018. The horizontal APE encompasses 281 acres and includes all areas where potential direct and indirect impacts to cultural resources could occur as a result of Project construction, operation, and maintenance. Vertical impacts have been estimated as ranging from two to 40 feet.

California Historical Resources Information System (CHRIS) records searches were conducted by the Central California Information Center (CCIC) on 25 September 2018 and again on 12 March 2019 (CCIC File No. 11010N) following alterations to the Project APE.

The search for archaeological and historical records covered a one-mile radius around the APE boundary. Additional sources consulted include the National Register of Historical Places (NRHP), California Register of Historical Resources (CRHR), California Historical Resources Inventory (CHRI), California Historical Landmarks (CHL), California Points of Historical Interest (CPHI), Caltrans Bridge Inventory, Bureau of Land Management General Land Office patent records, and local historic registers. The records search indicates a total of 35 cultural resources investigations have been completed previously within a one-mile radius of the Project area.

A request for information was both mailed and emailed to the McHenry Museum in the City of Modesto and the Ceres Historical Society in the city of Ceres on 11 June 2019. A response was received on 12 June 2019 from a volunteer with the McHenry Museum. The volunteer recommended contacting the Ceres Historic Society and the Turlock Irrigation District (T.I.D) office in Turlock for further information regarding historic resources with the APE. No response has been received from the Ceres Historical Society after three attempts. The last letter was returned by the Post Office as undeliverable. T.I.D. provided helpful information both verbally and in written form during and after the completion of fieldwork.

A Sacred Lands File (SLF) search request was submitted to the Native American Heritage Commission (NAHC) on 15 September 2017. The NAHC responded on 4 October 2017 stating that there are no known sacred lands within a half-mile radius of the Project APE. The NAHC provided a list of six Native American tribes or individuals to be contacted for more information regarding the potential for tribal resources within the vicinity of the APE.

Combined Assembly Bill 52/Section 106 consultation letters composed by the County were sent on 4 June 2019, requesting any information related to tribal resources or heritage sites within or adjacent to the APE. Groups contacted included the Calaveras Band of Mi-Wuk, Indians, the California Valley Miwok Tribe, the North Valley Yokuts Tribe, the Southern Sierrra Miwuk Nation, the Tule River Indian Tribe, and the Tuolumne Band of\ Me-Wuk Indians.

The Tuolumne Me-Wuk Tribal Council, responded by letter on 11 June 2019, stating that the tribe has no concerns regarding the Project at this time, but would like to be contacted in the event of any inadvertent discoveries.

Additional attempts at contact were made by email or phone on 26 June 2019 and 5 July 2019 with no responses.

The geoarchaeological assessment included in the ASR determined that only certain Hanford soils in the Project area are highly sensitive for buried archaeological sites; these are located just north and southwest of the Tuolumne River. The remainder of the Project area has moderate or low sensitivity for buried sites.

An intensive pedestrian survey of the APE was conducted between 13-17 March 2019. The cultural resources survey involved walking parallel transects, spaced at approximately 15-meter intervals within the APE while closely inspecting the ground surface. Existing disturbances (e.g., rodent burrows, ditches) were examined for artifacts or buried cultural

deposits. One fine-grained quartzite flake was identified in the APE. No other pre-historic archaeological resources were observed during the March 2019 survey.

HRER: The purpose of the HRER is to identify and evaluate historic resources present in or adjacent to the Project APE. The records searches and outreach conducted for the ASR were also used for the HRER. The records search returned one previously recorded historic built environment resource located within the Project APE, P-50-000073 (Turlock Irrigation District Water Conveyance System aka Ceres Canal). A total of 11 other previously recorded historic built environment resources were located within one mile. These include the Atchison Topeka and Santa Fe Railroad (AT & SF) Railroad Bridge No. 1088.1, the AT & SF Railroad, the Lakewood Cemetery, a former townsite, five historic houses, and one foundation remnant. The Caltrans Bridge Inventory was searched for the APE. In the APE, TID bridge No. 38C0149-T.I.D over the Ceres Main Canal was built in 1991 and is identified a class 5 - not eligible for NRHP.

The Bureau of Land Management General Land Office patent records were searched for the names of historic property owners. Multiple land patents were granted to individuals and the State of California for land located within the APE from 1854 to 1867 (Table 2.2-33).

An intensive built environment survey of the 181-acre APE was conducted 15 July 2019. This survey was limited to the standing structures within the APE. Some remnant built environment items were identified by the archaeological survey.

Six parcels contained a total of 26 buildings/structures and were newly-recorded and evaluated for historic significance. One irrigation system feature was newly recorded and one was updated. One historical archaeological site had remnant-built features but no historic artifacts. A second potential historical archaeological resource was identified using data from the Stanislaus County Assessor and in aerial photographs.

Table 2.2-33. Land Grant Patentees within the Study Area

Patentee Name	Year	Aliquots	Section	Township	Range
State of California	1854	All	36	2S	9E
Crow, James A.	1865	W½, E½W½, W½NW¼, W½SW¼	31	3S	10E
Tynan, Thomas E.	1865	SE¼	31	3S	10E
	1868	Lot/Trct 7, Lot/Trct 8	6	4S	10E
	1868	Lot/Trct 5	1	4S	9E
	1861	Lot/Trct 8	6	4S	10E
Merrill, Mumford S, Tynan, Thomas E.	1861	Lot/Trct 1	6	4S	10E
Fitzgerald, Wellington and Ripperdan, James	1861	Lot/Trct 4, NE¼	1	4S	9E
Whitmore, Daniel	1867	E½	12	4S	9E

Evaluations of the 26 buildings/structures, one irrigation system feature (in use), and one historical archaeological site are thoroughly documented in the Department of Parks and Recreation (DPR) 523 forms included as Appendix D of the Project HRER. As stated in the DPRs, some of the ancillary buildings (sheds and garages) and one mobile home are not historic in an age. All other buildings are 45 years old or more and have been evaluated as individual resources on DPR 523 forms.

The HRER concludes that the 26 buildings or structures, the one irrigation system feature, and the one historical archaeological site are not recommended eligible for listing on the NRHP or on the CRHR.

HPSR: The HPSR summarizes the findings of the ASR and HRER. The HPSR concludes that '*pursuant to Section 106 PA Stipulation IX.A and as applicable PRC 5024 MOU Stipulation IX.A.2, has determined a Finding of No Historic Properties Affected is appropriate for this undertaking because there are no historic properties within the APE.*" the Department has notified the State Historic Preservation Officer (SHPO) of its determination that no properties within the APE are eligible for inclusion in the NRHP, and has requested concurrence in its determination of *Finding of No Historic Properties Affected.*

2.2.10.3 Environmental Consequences

Section 4(f) of the Department of Transportation Act of 1966 provides protection for historic properties. There are no historic properties present within the APE; therefore, there are no Section 4(f) historic sites affected by the proposed project.

2.2.10.3.1 Build Alternative

The results of the survey of the Project APE for pre-historic archaeological resources, built environment resources, and archaeological resources determined that there are no historic properties for the purpose of Section 106 of the NHPA or historical resources in accordance with CEQA, either individually or as components of a historic district. The Project HPSR concludes with a *Finding of No Historic Properties Affected*.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, California Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner would notify the Native American Heritage Commission (NAHC), who, pursuant to PRC Section 5097.98, would then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains would contact [the County Department of Public Works] so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

2.2.10.3.2 No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements and therefore would not directly or indirectly impact cultural resources.

2.2.10.4 Avoidance, Minimization, and/or Mitigation Measures

The Project ASR, HRER, and HPSR document that no known cemeteries or burials occur within the project study area. Should human remains be discovered during the excavation portion of the Project, the Project contract includes contract provisions that would require notification of the County and compliance with California Health and Safety Code section 7050.5 and California Public Resources Code section 5097.98 et seq.

2.3 Physical Environment

2.3.1 Hydrology and Floodplain

2.3.1.1 Regulatory Setting

2.3.1.1.1 Executive Order (EO) 11988 (Floodplain Management)

Executive Order (EO) 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration (FHWA) requirements for compliance are outlined in 23 Code of Federal Regulations (CFR) 650 Subpart A.

To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the Project.

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

2.3.1.1.2 National Flood Insurance Program

FEMA is the nationwide administrator of the National Flood Insurance Program (NFIP), which is a program that was established by the National Flood Insurance Act of 1968 to protect lives and property, and to reduce the financial burden of providing disaster assistance. Under the NFIP, FEMA has the lead responsibility for flood hazard assessment and mitigation, and it offers federally backed flood insurance to homeowners, renters, and business owners in communities that choose to participate in the program. FEMA has

adopted the 100-year floodplain as the base flood standard for the NFIP. FEMA is also concerned with construction that would be within a 500-year floodplain for proposed projects that are considered "critical actions," which are defined as any activities where even a slight chance of flooding is too great. FEMA issues the Flood Insurance Rate Maps (FIRMs) for communities that participate in the NFIP. These FIRMs present delineations of flood hazard zones.

In California, nearly all of the State's flood-prone communities participate in the NFIP, which is locally administered by the California Department of Water Resources (DWR) Division of Flood Management. Under California's NFIP, communities have a mutual agreement with the State and federal governments to regulate floodplain development according to certain criteria and standards, which are further detailed in the NFIP.

2.3.1.2 Affected Environment

2.3.1.2.1 Hydrologic Setting

The Primary information source for this section was the Project's Floodplain Evaluation Report (FER, September 2019).

The Tuolumne River flows east to west through the Project area. The Ceres Main Canal Bridge occurs south of the Tuolumne River in the southern portion of the Project area.

The Tuolumne River watershed is primarily located in Tuolumne County and part of Stanislaus County and occupies approximately 1,958 sq mi (Figure 2.3-1). The contributing watershed for Tuolumne River at the Project Location is approximately 1,651 sq mi.

The headwaters of the Tuolumne River are streams in Mount Dana and Mount Lyell area of the Sierra Nevada, approximately 120 miles upstream of the Project location. Runoff from the headwaters is captured in Don Pedro Reservoir. West of Don Pedro Reservoir, the Tuolumne River descends through the Sierra Nevada foothills to the valley floor. Downstream of the Project location, a major tributary (Dry Creek) joins from the north in the City of Modesto. Tuolumne River's confluence with San Joaquin River is located approximately 14 miles west (downstream) of the Project location.

The Project site is within FEMA FIRM Number 06099C0560E for Stanislaus County, effective September 26, 2008 (Figure 2.3-2). The Project site is located in Special Flood Hazard Area (SFHA) Zone AE, which represents areas subject to flooding by the 100-year flood event determined by detailed methods where base flood elevations (BFEs) are shown. At the Project site, the 100-year flood elevation is approximately 81 feet NAVD 88 (Figure 2.3-2).

The Project site is also within a regulatory floodway. According to Section 60.3(d)(3) of Title 44 Code of Federal Regulations (CFR), encroachments within mapped base floodplains (where a floodway has not been designated) must demonstrate that the proposed development would not increase the base flood water surface elevation (WSE) more than 1 foot, and no increase of any amount in the base flood elevation in the floodway.

The proposed Faith Home Road and Garner Road Expressway bridge is at FEMA cross-section BC (Figure 2.3-2), which has a BFE of 80.7 feet. No increase of any amount in the BFE is allowed in the floodway without filing and approval of a FEMA Conditional Letter of Map Revision. Because this Project would add new hydraulic structures inside the floodplain and floodway, coordination with regulatory agencies would be required as part of this Project.

The Project is located in the Upper Stanislaus River Hydrologic Unit (hydrologic unit code 18040010). Section 13240 of the Porter-Cologne Water Quality Control Act requires each Regional Board to formulate and adopt water quality control plans, or basin plans, for all areas within the Region. The Porter-Cologne Act also requires each Regional Board to establish water quality objectives to ensure the reasonable protection of beneficial uses and a program of implementation for achieving water quality objectives within the basin plans. In California, the beneficial uses and water quality objectives are the State's water quality standards. The Project is subject to the Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins. The beneficial uses of the Tuolumne River in the Project vicinity identified by the Central Valley California Regional Water Quality Control Board are listed in Table 2.3-1.

Figure 2.3-1. Tuolumne River Watershed Map at Project Location

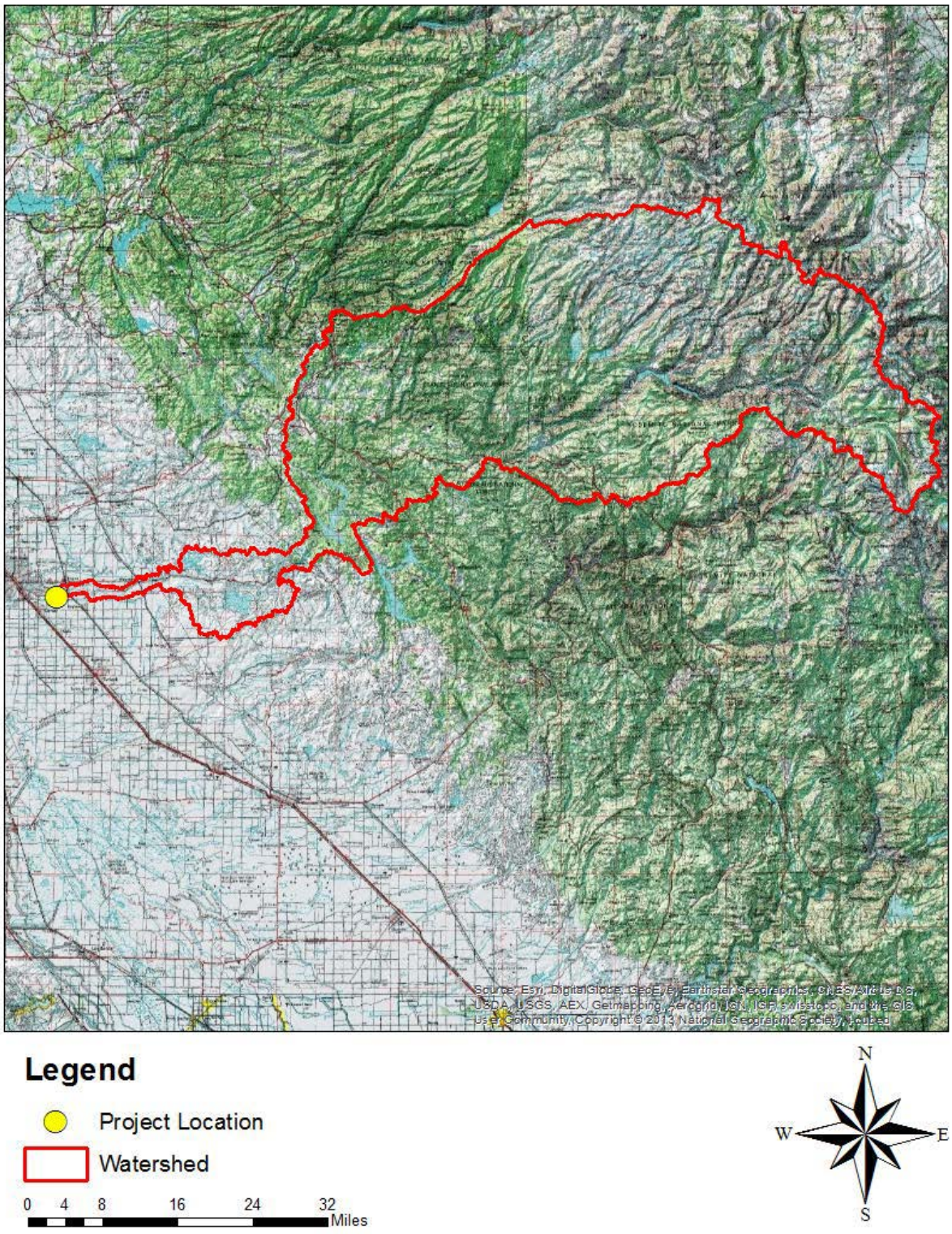

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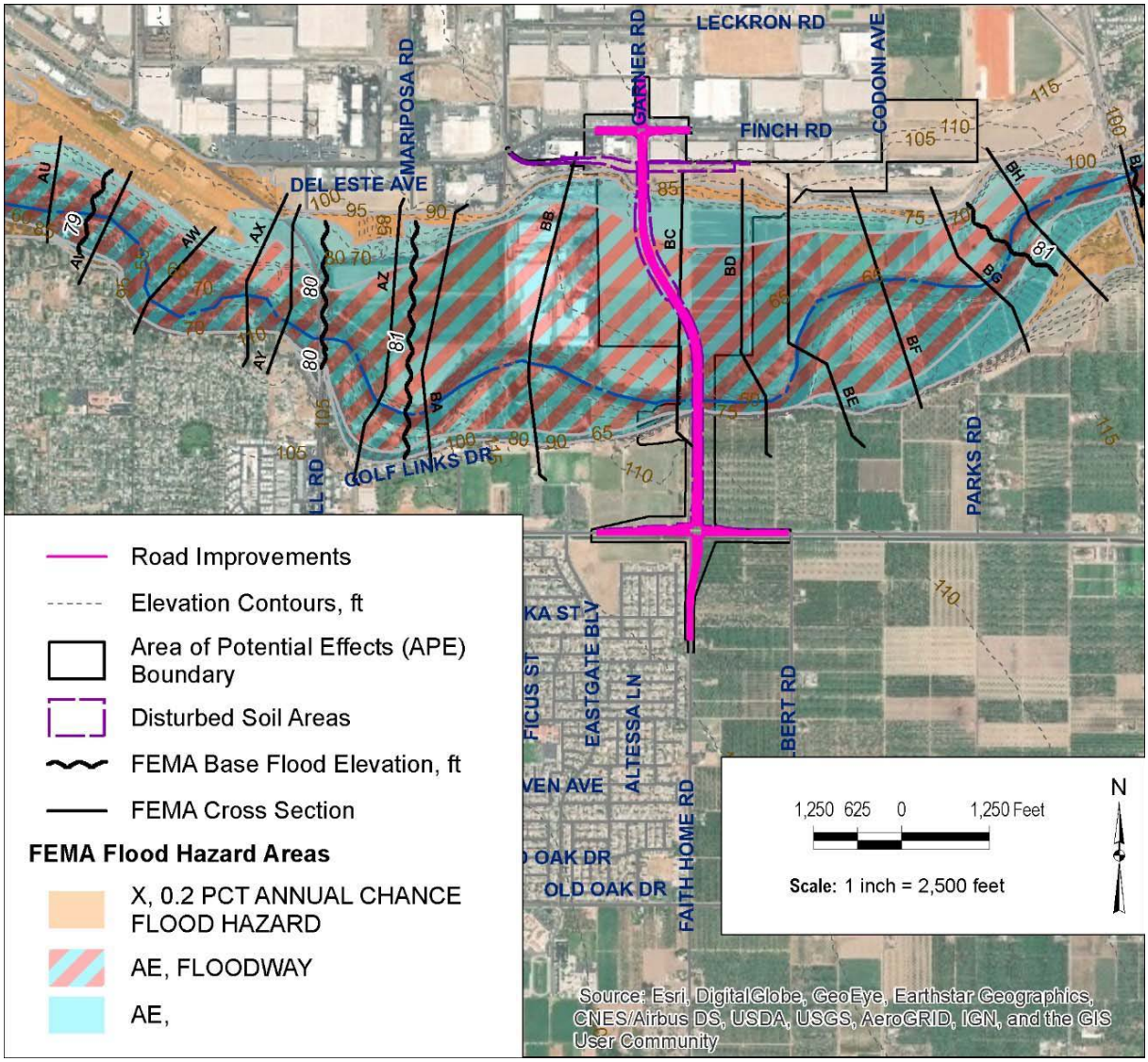
Figure 2.3-2. FEMA FIRM Overlay



(Portion of FEMA FIRM Number 06099C0560E, effective September 26, 2008)

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Table 2.3-1. Beneficial Uses of Tuolumne River

	MUN	Agriculture		Industry			Recreation				Freshwater Habitat		Migration		Spawning		WILD	NAV
	MUN	AGR		PROC	IND	POW	REC-1		REC-2	COMM	Warm	Cold	MIGR		SPWN		WILD	NAV
	Municipal and domestic Supply	Irrigation	Stock watering	Process	Service supply	Power	Contact	Canoe and Rafting	Other Noncontact	Commercial and Sport Fishing	Warm	Cold	Warm	Cold	Warm	Cold	Wildlife habitat	Navigation
Tuolumne River: New Don Pedro Dam to San Joaquin River	P	E	E	E	E	--	E	--	E	E	E	E	E	E	E	E	E	--
Ground Water Basin **5-022.01**	E	E	E	E	E	--	--	--	--	--	--	--	--	--	--	--	--	--

P= Potential Beneficial Use
E = Existing Beneficial Use

2.3.1.2.2 Hydrologic Assessment

The hydrology at the Project site was evaluated using the peak flood flows available from the following sources:

- FEMA Flood Insurance Study (FIS)
- Peak flows included in the FEMA hydraulic model
- Central Valley Flood Protection Board's design flood flows
- Annual peak flood flows recorded in USGS stream gauges

The hydraulic analyses were performed for both the existing and proposed conditions using the USACE's Hydrologic Engineering Center's River Analysis System (HECRAS) modeling software, Version 5.0.3. The FEMA-effective HEC-RAS file for Tuolumne River was provided by Michael Baker Corporation. According to the model description included in the HEC-RAS project file, the model was developed by the USACE between 1997 and 1998 for their flood mitigation study of the Tuolumne River.

The base hydraulic model included the bridge crossings in the Project vicinity. The configuration of the existing bridge structures included in the base hydraulic model remained unchanged. The proposed-condition bridge was based on the bridge structural plans available at the time of analysis.

2.3.1.3 Environmental Consequences

2.3.1.3.1 Build Alternative

The 100-year WSEs of Tuolumne River at the Project location for the existing and proposed conditions are summarized in Table 2.3-2. The widths of the 100-year floodplain of Tuolumne River at Project location are summarized in Table 2.3-3.

The proposed Project would construct a new bridge structure over Tuolumne River. Because there is no existing bridge or other hydraulic structures inside the Tuolumne River available at the Project location, the proposed bridge structure would be a net fill inside the existing 100-year floodplain, and hydraulic analysis outputs showed it would raise the 100-year flood profile of Tuolumne River by approximately 0.11 feet or less. This would increase the width of 100-year floodplain upstream of the proposed bridge by approximately 3 feet or less.

Table 2.3-2. Summary of Floodplain Elevation, 100-year Storm Event

River Station in HEC-RAS Model	Location/ Distance from "FH" Line	Q100 Floodplain Elevation		
		Existing (feet NAVD 88)	Proposed (feet NAVD 88)	Elevation Change (feet)
22.113 BR U	Santa Fe Avenue Railroad Bridge Bridge Upstream Face	81.77	81.87	0.10
22.113 BR D	Santa Fe Avenue Railroad Bridge Bridge Upstream Face	81.75	81.84	0.09
22.11	7,960 feet Upstream	81.80	81.89	0.09
21.86	6,630 feet Upstream	81.59	81.69	0.10
21.61	5,300 feet Upstream	81.40	81.50	0.10
21.51	4,740 feet Upstream	81.34	81.45	0.11
21.31	3,730 feet Upstream	81.24	81.35	0.11
20.98	2,050 feet Upstream	81.15	81.26	0.11
20.79	975 feet Upstream	81.11	81.22	0.11
20.585	120 feet Upstream	81.06	81.09	0.03
20.579	90 feet Upstream	81.06	81.06	0.00
20.56 BR U	Proposed Faith Home Road Bridge Bridge Upstream	n/a	81.02	n/a
20.56 BR D	Proposed Faith Home Road Bridge Bridge Downstream	n/a	81.01	n/a
20.55	90 feet Downstream	81.05	81.01	-0.04
20.546	120 feet Downstream	81.05	81.02	-0.03
20.4	1,500 feet	81.01	81.01	0.00

Note: There are no existing bridge structures at the proposed Faith Home Road Bridge. Change in WSE was not determined at the bridge upstream/downstream faces.

Table 2.3-3. Summary of Floodplain Width, 100-year Storm Event

River Station in HEC-RAS Model	Location/ Distance from "FH" Line	Q100 Floodplain Width		
		Existing (feet)	Proposed (feet)	Floodplain Width Change (feet)
22.113 BR U	Santa Fe Avenue Railroad Bridge Bridge Upstream Face	573	574	1
22.113 BR D	Santa Fe Avenue Railroad Bridge Bridge Upstream Face	573	574	1
22.11	7,960 feet Upstream	624	625	1
21.86	6,630 feet Upstream	1,566	1,568	3
21.61	5,300 feet Upstream	2,023	2,024	1
21.51	4,740 feet Upstream	2,254	2,256	2
21.31	3,730 feet Upstream	2,619	2,620	1
20.98	2,050 feet Upstream	3,143	3,145	1
20.79	975 feet Upstream	3,113	3,115	2
20.4	1,500 feet Downstream	3,784	3,784	0

Note: Floodplain widths are rounded to the nearest 1 feet.

Executive Order 11988 requires federal agencies to avoid to the maximum extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The paragraphs below analyze the potential floodplain impacts associated with this Project.

Risk Associated with the Proposed Action: As defined by the FHWA, risk means the consequences associated with the probability of flooding attributable to an encroachment. It includes the potential for property loss and hazard to life during the service life of the bridge and roadway. The potential risk associated with the implementation of the proposed action includes:

- **Change in Land Use**: The Project proposes to construct a new connection route over Tuolumne River. Due to the nature of the proposed work, the Project would not change the overall land use within the Project location and within the watershed.

- **Change in Impervious Surface Area:** Because the new bridge would be constructed over Tuolumne River, the Project would result in an increase in impervious surface area within the Tuolumne River watershed. However, considering the watershed area of Tuolumne River at the Project location is approximately 1,651 sq mi, the added impervious areas from the Project would not substantially increase the percentage of impervious surface within the watershed.

- **Fill inside the floodplain:** The proposed bridge would include fill inside the floodplain associated with new abutments, pier columns, approach roadways, and embankments.

- **Change in the 100-year WSE:** As demonstrated in the hydraulic analysis of both the existing and proposed conditions, the Project would increase the 100-year flood profile upstream of the proposed Faith Home Road and Garner Road Expressway bridge by approximately 0.11 feet or less in elevation (Table 2.3-2) and 2-3 feet in width (Table 2.3-3).

Summary of Potential Encroachments: The FHWA defines a significant encroachment as a highway encroachment, and any direct support of likely base floodplain development, that would involve one or more of the following:

- **Significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community's only evacuation route:** The base flood is the flood that has a 1 percent-annual-chance (100-year flood) of occurrence in any given year. Hydraulic modeling of the proposed bridge indicates the proposed Faith Home Road and Garner Road Expressway bridge and approach areas are not overtopped during a 100-year storm event. The design criteria for the road was that it would not be inundated at a 200-year storm event. Therefore, the proposed bridge would not be expected to experience traffic interruptions due to the base flood.

  Construction of the proposed Faith Home Road and Garner Road Expressway would not interrupt or terminate the existing roadway bridges at the Santa Fe Avenue and Mitchel Road crossings of the Tuolumne River up- and down-stream of the Project location. The proposed roadway crossing below the Modesto and Empire Traction Company short-line railroad would be constructed to avoid interruption to the operation of the railroad.

- **Potential Impacts on Natural and Beneficial Floodplain Values:** Natural and beneficial floodplain values include, but are not limited to: fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and ground water recharge. The existing beneficial uses of Tuolumne River are listed in Table 2.3-1. Potential short-term adverse effects during the construction of the new bridge to the natural and beneficial floodplain values include the following: 1) loss of vegetation during construction activity; and 2) temporary disturbance of wildlife and aquatic habitat. Potential permanent impacts include modification of vegetation and wildlife/aquatic habitat at the new bridge structure, approaches, and piers.

- **Support of Probable Incompatible Floodplain Development:** As defined by the FHWA, the support of incompatible base floodplain development will encourage, allow, serve, or otherwise facilitate incompatible base floodplain development, such as commercial development or urban growth. The purpose of the Project is to improve operations between SR 132 and SR 99 and the north-south linkage for the

M&ET intermodal transfer facility. The Project does not provide a new access route to the existing floodplain including the Tuolumne River

- **Longitudinal Encroachments:** A longitudinal encroachment is an encroachment that is parallel to the direction of flow. For example: A highway that runs along the edge of a river is usually considered a longitudinal encroachment. The requirement for consideration of avoidance alternatives must be included in a Floodplain Evaluation Report by including an evaluation and a discussion of the practicability of alternatives to any significant encroachment or any support of incompatible floodplain development. Based on the alignment of the proposed Faith Home Road and Garner Road Expressway and approach areas within the FEMA 100-year floodplain, the approach areas are not parallel to the direction of the 100-year flood flow, and therefore the Project would not be considered a longitudinal encroachment.

Minimize Floodplain Impacts: The proposed bridge would increase the BFE of the Tuolumne River. The Project minimizes impacts to the 100-year floodplain by spanning the entire main channel of the Tuolumne River and limiting the fill in the floodplain to the maximum extent practicable.

Alternatives to Significant Encroachments: Spanning the main channel by maximizing the length the bridge segment of the proposed Faith Home Road and Garner Road Expressway crossing over the main channel of Tuolumne River and the FEMA 100-year floodplain and floodway would minimize the impacts to the vertical profile and horizontal extents of the existing FEMA floodplain/floodway. However, this option does not fully mitigate the impacts to the floodway because the approach and proposed bridge structure would have a net fill inside floodplain/floodway.

Significant encroachments to the FEMA floodway can be avoided if the bridge spanned completely outside of the extents of the FEMA 100-year floodplain. However, such design would not be feasible at the Project location, because it would require a solid structure foundation anchored to the bedrock on both sides of the floodplain and would require a span of over 3,000 feet which is infeasible from a cost and engineering perspective.

The proposed Project would not be a longitudinal encroachment to the existing floodplain. Therefore, alternatives to longitudinal encroachments were not analyzed.

The hydraulic analysis for the Project indicates that the Project would increase 100-year flood profiles upstream, which is due to the infeasibility of constructing a bridge at the Project location without also constructing the approach and bridge-supporting columns/piers in the floodplain. Although no properties in the nearby Project area are likely to be inundated or face increased flood risks due to the proposed Project, the Project would increase the BFE of the floodway; therefore, additional regulatory permits and coordination with agencies would be required, and a FEMA floodplain map revision and Letter of Map Revision are anticipated as part of this Project. In addition, the final Environmental Document must include the Only Practicable Alternative Finding which includes the following items:

- The reasons why the proposed action must be located in the floodplain,
- The alternatives considered and why they were not practicable, and
- A statement indicating whether the action conforms to applicable state or local floodplain protection standards.

Potential short-term impacts during the construction of the new bridge to the natural and beneficial floodplain values include the following: 1) loss of vegetation during construction activity; and 2) temporary disturbance of wildlife and aquatic habitat. Potential permanent impacts include modification of vegetation and wildlife/aquatic habitat at the new bridge structure, approaches, and piers.

2.3.1.3.2 No-Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly impact hydrologic or floodplain resources.

2.3.1.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of Measure BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), BIO-3 (Seasonal Wetland), BIO-10 (Valley elderberry longhorn beetle), BIO-11 (Steelhead – California Central Valley), and WQ-1 (hydromodification) would reduce potential temporary and permanent impacts to the natural and beneficial floodplain values present in the Project area.

Implementation of floodplain of measure HYDRO-1 would reduce potential effects associated with the increase in the BFE.

Measure HYDRO-1 (Floodplain Coordination)

- The County will coordinate with local, state, and federal water resource and floodplain management agencies as necessary during all aspects of the proposed Project. As applicable a FEMA floodplain map revision and Letter of Map Revision will be prepared.

2.3.2 Water Quality and Storm Water Runoff

2.3.2.1 Regulatory setting

FEDERAL REQUIREMENTS

Clean Water Act: In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and

industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCBs) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (U.S. EPA) Section 404 (b)(1) Guidelines (40 Code of Federal Regulations [CFR] Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general

requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

STATE REQUIREMENTS:

Porter-Cologne Water Quality Control Act: California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards: The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System NPDES Program

Municipal Separate Storm Sewer Systems (MS4): Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water." The SWRCB

has identified the Department as an owner/operator of an MS4 under federal regulations. The Department's MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department's MS4 Permit, Order No. 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014) and Order No. 2015-0036-EXEC (conformed and effective April 7, 2015) has three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);

2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the maximum extent practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit (CGP): Construction General Permit, Order No. 2009-0009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012). The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution

prevention control measures; and to obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with the Department's SWMP and Standard Specifications, a Water Pollution Control Program (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting: Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

REGIONAL AND LOCAL REQUIREMENTS

RWQCB Basin Plan: The Central Valley Regional Water Quality Control Board's (CVRWQCB) *Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region: The Sacramento River Basin and the San Joaquin River Basin,* dated July 2016, regulates surface and groundwater quality in the region, lists beneficial uses, and lists water quality objectives to protect those uses.

MS4: Stanislaus County and the City of Ceres are approved permittees under the SWRCB's Phase II Small MS4 permit. The majority of the Project lies within the "red zone", as defined by the County's NPDES permit coverage map, and is subject to the SWRCB Phase II Small MS4 permit. Areas covered by the permit are subject to the County's Post-Construction Standards Plan, discussed below. Coordination between Stanislaus County and the City of Ceres may be necessary to ensure construction stormwater discharges are compliant with the Phase II MS4 Permit.

Stanislaus County Post-Construction Standards Plan: The Stanislaus County Post-Construction Standards Plan, effective July 1, 2015, is a guidance document for post-

construction stormwater design measures. The Plan defines a "Regulated Project" as a project creating and/or replacing more than 5,000 sq feet of impervious surface. Regulated Projects include new and redevelopment projects on public or private land that fall under the planning and permitting authority of the municipality. Redevelopment is defined as any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface areas on a site on which some previous development has occurred. If a redevelopment project results in an increase of more than 50 percent of the impervious surface of a previously existing development, runoff from the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the selection and sizing of Site Design Measures and Treatment Control Measures to the extent feasible.

DEWATERING: CVRWQCB Order R5-2016-0076-01 (NPDES Permit No. CAG995002). *General Waste Discharge Requirements/NPDES Permit for Limited Threat Discharges to Surface Waters* adopted on 14 October 2016, modified on 28 October 2016, and amended by Order R5-2018-0002 on 1 February 2018, authorizes discharge to waters of the U.S. for the following tiers of wastewater:

- Tier 1A: Relatively clean discharges of less than 0.25 million gallons per day (MGD) and/or less than 4 months in duration.
- Tier 1B: Relatively clean discharges greater than or equal to 0.25 MGD and/or greater than or equal to 4 months in duration.
- Tier 2: Discharges that may contain toxic organic constituents, volatile organic compounds, pesticides, inorganic constituents, chlorine, and/or other chemical constituents that require treatment prior to discharge.
- Tier 3: Discharges of wastewater from hard rock mines.

A Notice of Intent must be completed, as described in Attachment J of the General Order, to obtain authorization for discharges to surface water.

2.3.2.2 Affected Environment

The Primary information sources for this section include the Project's Water Quality Assessment Report (WQAR, September 2019), Draft Stormwater Control Plan (April 2019), and the Final Drainage Impact Study Report (November 2018).

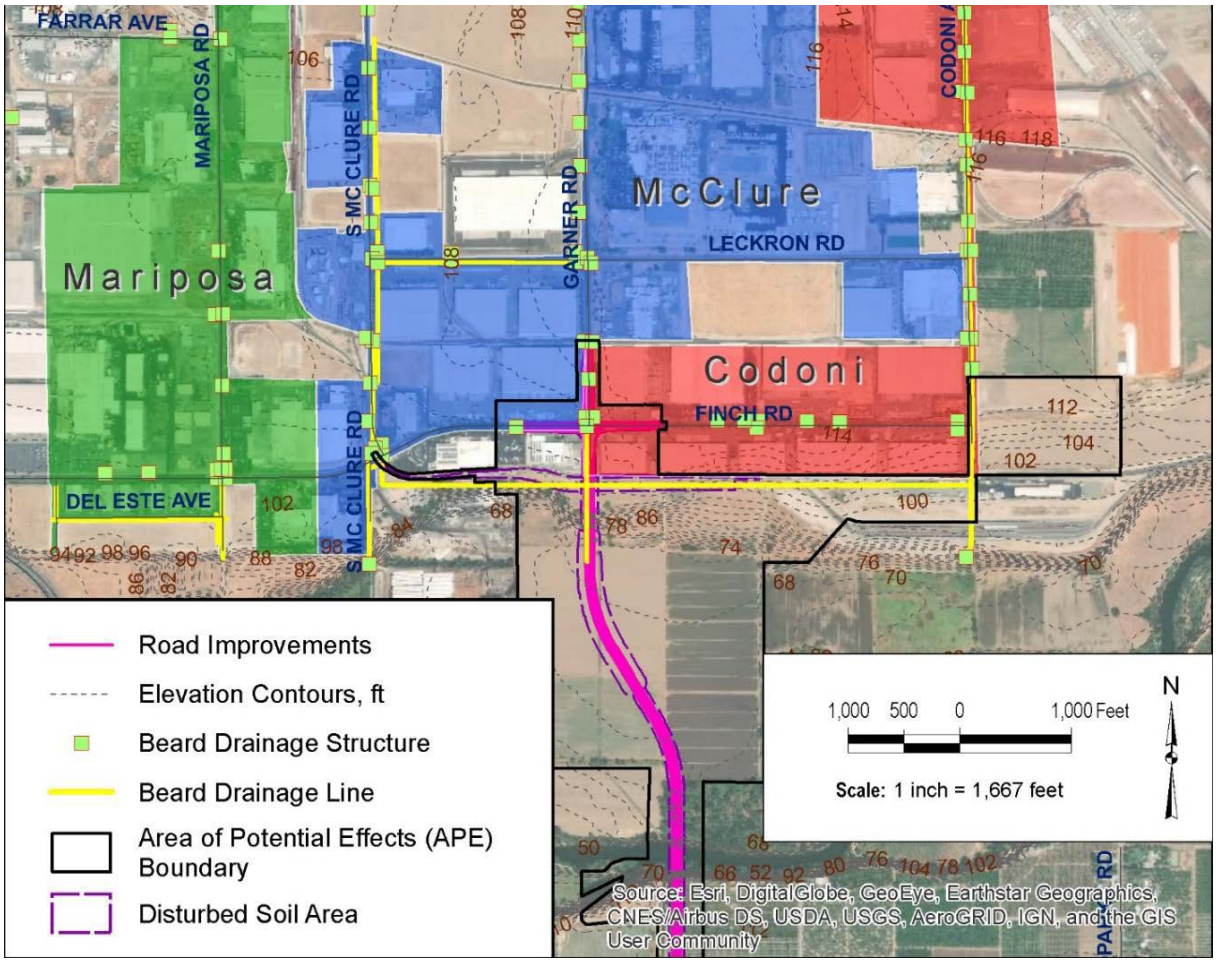
Regional hydrology is discussed in section 2.2.1.2.1.

Peak flows in the Tuolumne River occur during two distinct seasons: during rainfall events in the winter months and in the spring with mountain snowmelt. Spring heat waves can also cause large flooding events. Snow melt, precipitation runoff, and groundwater base flow contribute to the total flow. The Don Pedro Dam/ Don Pedro Reservoir is located approximately 30 miles east of the Project site along the Tuolumne River. The Don Pedro Dam is an earthen embankment dam that creates an impoundment (Don Pedro Reservoir) of the Tuolumne River.

Local Hydrology: Existing drainage structures present include the roadway swales near the intersection of Faith Home Road and East Hatch Road and also the roadway drainage near the intersection of Garner Road and Finch Roads.

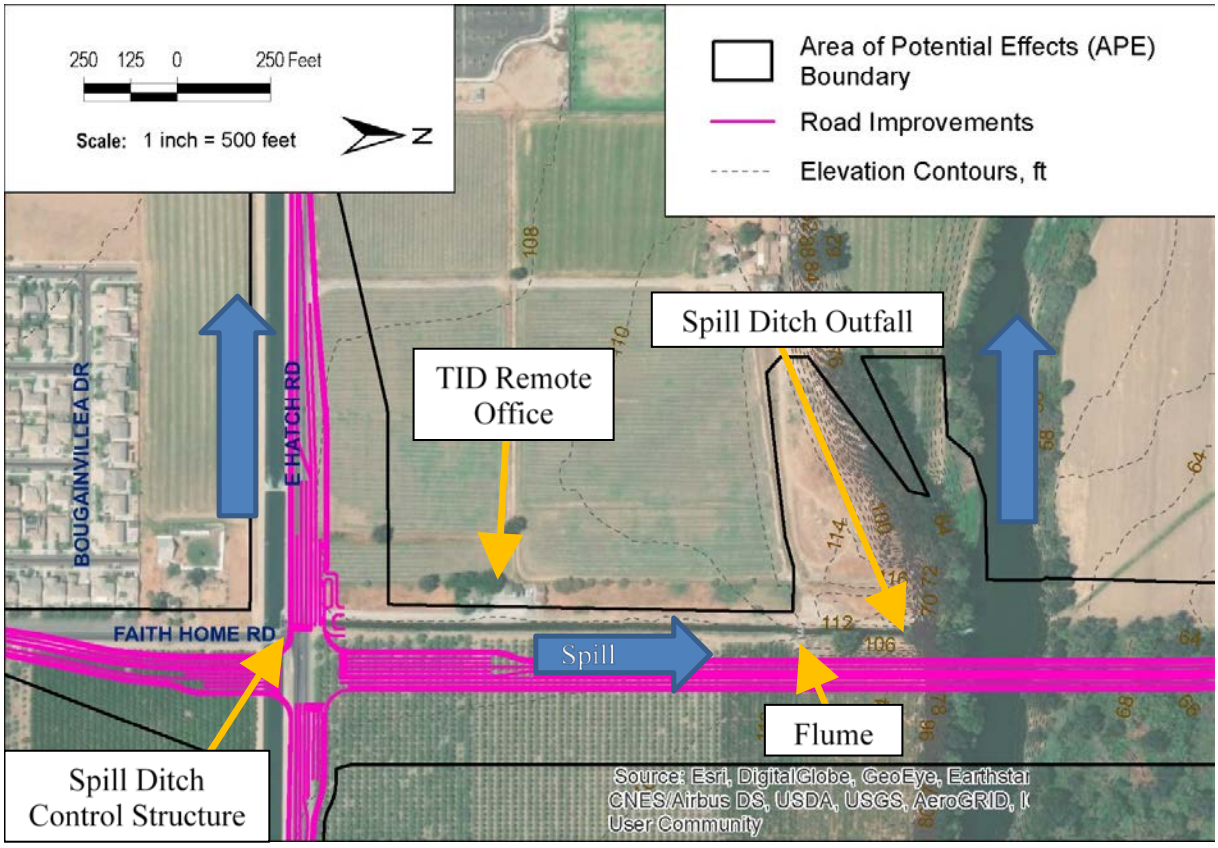
The Beard Industrial District is located north of the Project. Based on information provided by M&ET, four drainage systems convey flows to the south through Mariposa Road, McClure Road, Garner Road, and Codoni Avenue to a series of outfalls located south of Finch Road (Figure 2.3-3).

Figure 2.3-3. Beard Industrial District Drainage System.



South of Tuolumne River, TID manages an irrigation system with several components within the Project area, including the Ceres Main Canal, Faith Home control structure, spill ditch, ditch outfall to Tuolumne River, and a flume that crosses over the spill ditch to convey water from an underground irrigation line past the spill ditch. The Ceres Main Canal provides water primarily for irrigation. The spill ditch is designed to allow excess water in the canal to be diverted to Tuolumne River to maintain optimal canal levels downstream (west) of Faith Home Road. The Faith Home control structure is used to regulate the diversion from the canal into the spill ditch. The spill ditch and ditch outfall drain by gravity to the Tuolumne River. The majority of the spill ditch outfall is unlined with the exception of the last 50-feet of the ditch before it drains down the bank in a concrete lined outfall from the top of the south bank to the Tuolumne River. Part of the spillway is covered to form an aboveground tunnel. System components and flow directions in the Project vicinity are shown in Figure 2.3-4.

Figure 2.3-4. TID System Components



Outside of the Beard Industrial District and TID drainage systems and between the Garner and Finch Road and Faith Home Road and Hatch Road intersections, the Project drains directly into Tuolumne River which flows east to west through the Project area.

Groundwater: The Project is located within the San Joaquin Valley Groundwater Basin and the Turlock and Modesto Subbasins. Groundwater occurs in both subbasins under unconfined, semi-confined, and confined conditions. Groundwater flow is primarily to the southwest, following the regional dip of basement rock and sedimentary units. California

Department of Water Resources, Groundwater Bulletin 118 describes the subbasins as follows:

- The Turlock subbasin (south of Tuolumne River) covers approximately 542 square miles of surface area in Stanislaus and Merced counties and has a storage capacity of approximately 6,500,000-acre feet to a depth of 300 feet.

- The Modesto subbasin (north of Tuolumne River) covers approximately 385 square miles in Stanislaus County and has a storage capacity of approximately 15,800,000-acre feet to a depth of 300 feet. Groundwater recharge in the Modesto subbasin is primarily from deep percolation of applied irrigation water, canal seepage, and the Modesto Reservoir. Lesser recharge occurs as result of subsurface flows originating in the mountains and foothills along the east side of the subbasin, losses from minor streams, and from percolation of direct precipitation.

A map of groundwater basins and subbasins within the San Joaquin River Hydrologic Region is shown in Figure 2.3-5.

Soils in the Project vicinity are mostly well-draining soils belonging to Hydrologic Soil Group (HSG) A or B. HSG A soils are well-draining, whereas HSG D soils drain poorly. The poorest draining soils along the Project are located in the floodplain north of Tuolumne River.

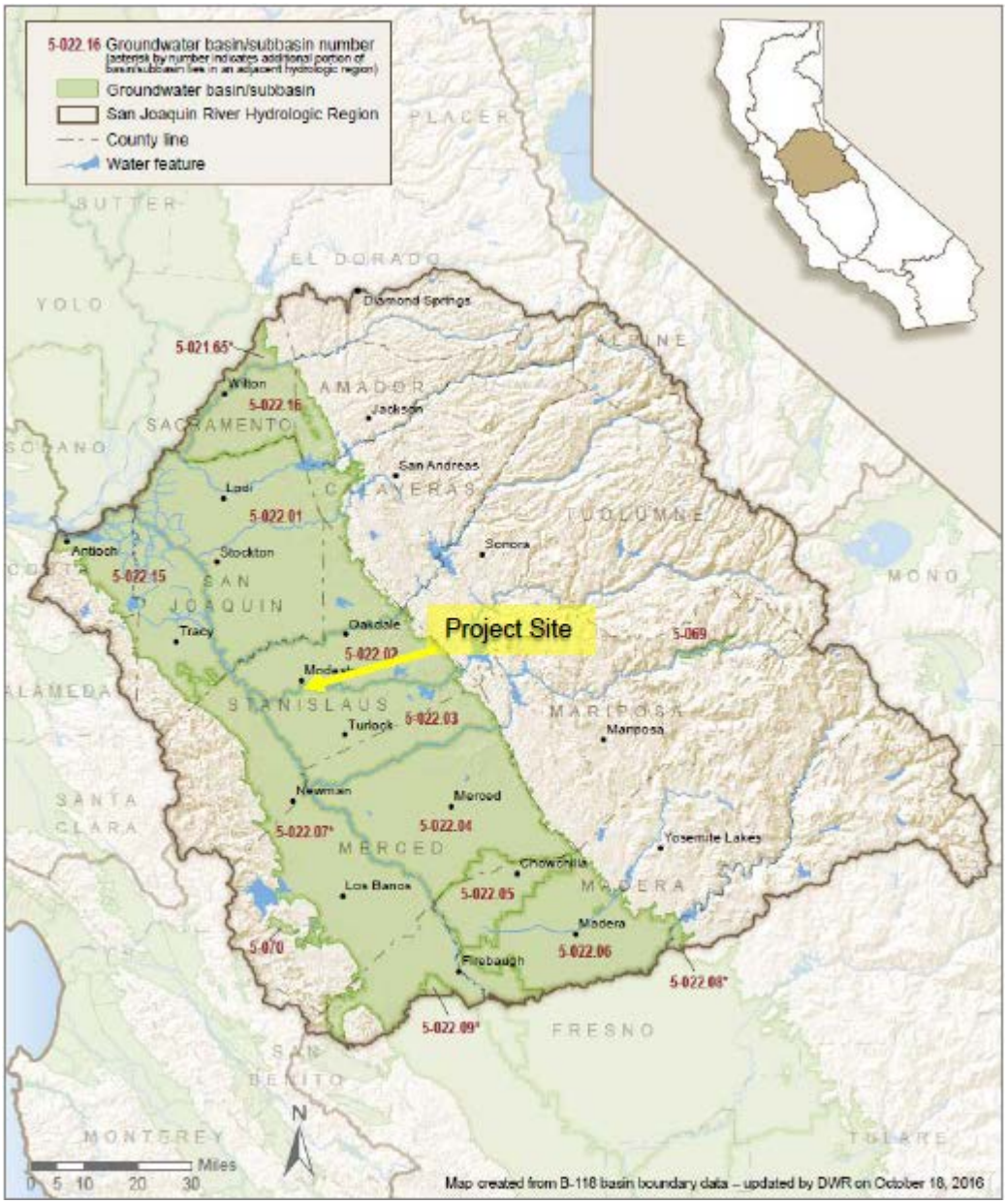
Beneficial uses for the surface and ground waters in the Project vicinity are listed in the CVRWQCB Basin Plan and are shown in Table 2.3-1.

The CVRWQCB developed numeric and narrative Water Quality Objectives (WQO) that apply to surface waters within the Sacramento and San Joaquin River Basins. Numeric WQOs applicable to all surface waters within the Sacramento and San Joaquin River Basins are provided for bacteria, dissolved oxygen, pH, temperature, turbidity, and radioactivity. Specific pesticide WQOs applicable to Tuolumne River are shown in Table 2.3-4.

Table 2.3-4. Basin Plan Specific Pesticide Objectives

Pesticide	Maximum Concentration and Averaging Period
Chlorpyrifos	0.025 µg/L; 1-hour average (acute) 0.015 µg/L; 4-day average (chronic) Not to be exceeded more than once in a three-year period
Diazinon	0.16 µg/L; 1-hour average (acute) 0.10 µg/L; 4-day average (chronic) Not to be exceeded more than once in a three-year period

Figure 2.3-5. Groundwater Subbasins



Existing Water Quality: The Tuolumne River is a CWA 303(d) listed impaired water body for the following constituents: Group A pesticides, mercury, temperature, toxicity, chlorpyrifos, and diazinon. The chlorpyrifos and diazinon agricultural impairments are addressed by Water Quality Objectives (1-hr average and 4-day average maximum concentrations) mentioned in the CVRWQCB's Basin Plan under resolution R5-20140041. All other impairments mentioned remain on the "TMDL required list" and their sources are unknown.

2.3.2.3 Environmental Consequences

2.3.2.3.1 Build Alternative

Permanent impacts to water quality may result from the addition of impervious area, which prevents runoff from naturally dispersing and infiltrating into the ground, resulting in increased concentrated flow. The additional flow has the potential to transport an increased amount of sediment and pollutants to Tuolumne River, as well as increase erosion due to changes to the Tuolumne River hydrograph. The new bridge and abutments have the potential to impact flood control functions and erosion and accretion patterns.

Temporary water quality impacts during construction include sediment-laden discharge from disturbed soil areas (DSA) and pollutant-laden discharge from storage or work areas. Temporary diversion and dewatering are anticipated at the cofferdams surrounding the bridge columns.

Groundwater may be temporarily impacted during anticipated dewatering operations. Fill is anticipated to construct the peninsula berm north of the proposed bridge that would connect to the northern bluff.

The Project is anticipated to create and/or replace approximately 23.60 acres of impervious surface and disturb approximately 41.92 acres of soil. The Project's new impervious surfaces are primarily associated with the creation of the new expressway and bridge over the Tuolumne River, as well as the widening of smaller existing roadways. No removed (and not replaced) impervious area is anticipated. The DSAs, existing impervious areas, replaced impervious surface areas, and associated with the Project are provided in Table 2.3-5. These numbers may be refined during the design process when more information is available.

Table 2.3-5. DSA and Existing, New, and Replaced Impervious Areas (in Acres).

	Stanislaus County		City of Ceres	
Water Quality Areas	**Expressway**	**Railroad**	**Expressway**	**Project Total**
DSA	29.88	7.98	4.06	41.92
Existing Impervious Area	6.00	1.14	3.07	10.21
Replaced Impervious	4.53	1.14	2.00	7.67
New Impervious Surface	14.54	0	1.39	15.93

The Project is subject to the SWRCB Phase II Small MS4 permit. The Project creates or replaces more than 5,000 sq feet of impervious area and is required to implement post-construction stormwater controls for new impervious surfaces under the MS4 Permit. Site Design Measures, Treatment Control Measures, and hydromodification measures would be implemented to "infiltrate, evapo-transpire, harvest and reuse, or biotreat storm water runoff" and offset the difference between the pre- and post- construction peak flow runoff rates and volumes.

The primary Site Design Measures, Treatment Control Measures, and hydromodification measures implemented by the Project to accommodate surface drainage conveyance and disposal would include roadside ditches and/or bioswales, culverts, combination infiltration/detention basins, and a pump station.

- **Roadside Ditches:** Where space permits, percolation, roadside ditches, and bioswales are the preferred means of stormwater conveyance for the Project. A series of ditches or bioswales is proposed along the base of the viaduct and also from the south end of the new bridge to the intersection of Faith Home Road and East Hatch Roads.

- **Culverts:** Culverts are proposed at locations where ditches are inconvenient or space is constrained. For instance, culverts are proposed at the intersections on the north and south ends of the Project. Culverts are also proposed in the vicinity of the railroad undercrossing and would be utilized on the peninsula to convey water downslope to the swales.

- **Combination Basins:** Using the County's basin sizing equation and the runoff coefficient (C) presented in Table 2.3-6 of the Standards, an estimated required total basin volume of 1.84 acre-feet. Combination infiltration/detention basins are proposed for the Project due to the presence of compatible soils. Near the railroad bridge, the proposed roadway has a sag, which would not drain by gravity without special treatment. To drain this low point while simultaneously meeting hydromodification requirements, this study considers two hydraulically-connected combination infiltration/detention basins—with equal volumes of 0.92 acre-feet each— located at the floodplain elevation below the proposed roadway and on either side of the sag vicinity. The basins would be designed to gravity drain under low-tailwater (or downstream) water surface elevation conditions, with outlets to ditches and/or swales along the base of the viaduct leading to the Tuolumne River. Flap gates would be installed at the ends of the outlets to prevent backwater from entering the basins under high tailwater WSE conditions. To drain the basins with the flap gates shut, a pump station designed for the 50-year storm pumping rate would be placed inside the western basin since the topography of the floodplain generally slopes from east to west, and it would be rated with sufficient maximum head to pump against the 200-year flood elevation. The dual basin system would also provide hydromodification benefits by detaining flows and mitigating the increased peak discharges resulting from other added impervious areas. Further, detaining flows would increase groundwater infiltration.

Table 2.3-6. Preliminary Basin Sizing for Proposed Condition

Area of Improvement	Net New Impervious Area (acres)	Runoff Coefficient, C	Volume Required (acre-feet)
North Bluff	4.00	1.0	0.97
Sag below RR Overcrossing	2.00	1.0	0.48
Causeway	1.60	1.0	0.39
Total	**7.60**		**1.84**

For areas of unincorporated Stanislaus County that are outside of the "red zone", the Project is subject to the post-construction standards of the CGP. The pre-Project water balance (volume of rainfall that ends up at runoff) in these areas must be maintained upon completion of the Project. The water balance calculation is based on the 85th percentile storm event or the smallest storm event that creates runoff, whichever is larger. The Project also disturbs more than two acres of soil in this area and is required to preserve the pre-construction drainage density (miles of stream length per square mile of drainage area).

It is anticipated that the Project would incorporate Phase II MS4 post-construction standards in all areas of the Project (i.e., for areas outside of the "red zone") as a conservative and consistent approach. This determination would be made in coordination with the County prior to the design phase.

2.3.2.3.2 No Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly impact water quality.

2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures

Measures BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), BIO-3 (Seasonal Wetland), BIO-10 (Valley elderberry longhorn beetle), and BIO-11 (Steelhead – California Central Valley) contain actions that reduce potential impacts to water quality as well as biological resources.

Coverage under the Statewide General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ)) would be obtained. The County would require the contractor to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to reduce or minimize discharge of pollutants from construction activities.

Hydromodification measures would be required to offset the difference between the pre- and post-construction peak flow runoff rates and volumes. Implementation of measure WQ-1 would reduce potential surface and groundwater impacts.

Measure WQ-1 (Hydromodification)

- The Project creates and/or replaces more than one acre of impervious surface and would incorporate Site Design and Treatment Control Measures that prevent the post-project runoff from exceeding the pre-project runoff rate for a 2- year, 24-hour storm event. All hydromodification measures would be selected, sized, and situated in accordance with the guidance provided in the current MS4 permit and the County's Post-Construction Standards Plan. Potential Site Design Measures and Treatment Control Measures are listed in the table below.

Potential Site Design and Treatment Control Measures

Site Design and Treatment Control Measure	California Stormwater Quality Association (CASQA) Specification
Stream setbacks and vegetative buffers (Site Design Measure)	TC-10
Soil quality improvement (Site Design Measure)	TC-40
Tree planting and preservation (Site Design Measure)	SD-10
Porous pavement (Site Design Measure)	SD-20
Vegetated swales (Site Design Measure)	TC-30
Rain harvesting and reuse (Site Design Measure)	TC-12
Bioretention and rain gardens (Treatment Control Measure)	TC-32
Infiltration trench, flow-through planter, or tree wells (Treatment Control Measure)	TC-10
Retention and detention basins (Treatment Control Measure)	TC-11; TC-12; TC-22; TC-40

2.3.3 Geology/Soils/Seismic/Topography

2.3.3.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act (CEQA).

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Structures are designed using the Department's Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities.

For more information, please see the Department's Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

Alquist-Priolo Earthquake Fault Zoning Act: California's Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (PRC Section 2621 et seq.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce risks to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as active, and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones.

Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are "sufficiently active" and "well-defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as referring to approximately the last 11,000 years). A fault is considered well-defined if its trace can be identified clearly by a trained geologist at the ground surface, or in the shallow subsurface using standard professional techniques, criteria, and judgment.

Seismic Hazards Mapping Act: Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards; and cities and counties are required to regulate development within mapped seismic hazard zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans. Geotechnical investigations conducted within Seismic Hazard Zones must incorporate standards specified by California Geological Survey Special Publication 117a, Guidelines for Evaluating and Mitigating Seismic Hazards.

2.3.3.2 Affected Environment

The primary information sources for this section include the Project's Draft Preliminary Foundation Report (October 2018) and the Stanislaus County General Plan and Airport Land Use Compatibility Plan Update Draft Program Environmental Impact Report (April 2016).

The Project site is located within the Great Valley geomorphic province of California. The Great Valley is an alluvial plain about 50-miles wide and 400-miles long in the central part of

California. Its northern part is the Sacramento Valley, drained by the Sacramento River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic (about 160 million years ago).

Published geologic mapping on the Preliminary Geologic Maps Showing Quaternary Deposits of the Ceres, Denair, and Montpelier 7 ½' Quadrangles, Stanislaus and Merced Counties, California (United States Geological Survey, 1980) shows the Project site is underlain by Post-Modesto Deposits and the Modesto Formation.

The Post-Modesto Deposits are generally described as alluvial sand, gravel, and silt deposits located along the Tuolumne River. These deposits are located along the active Tuolumne River channel and floodplain north of the active channel.

The Modesto Formation is described as arkosic alluvium, sand with minor gravel, and silt. This deposit comprises the bluff south of the active river channel and the northern bluff located outside of the floodplain.

For preliminary design purposes, a subsurface exploration program was implemented for the proposed bridge to better characterize the subsurface soil and groundwater conditions at the Project site. Five exploratory soil borings were drilled, sampled, and evaluated from along the proposed bridge and roadway alignment.

Two geologic units of engineering significance to the Project were identified based on these borings. These units include an upper younger unit consisting of sand, silt, and mixtures of sand and silt both at the bluffs and within the channel. Below this is a generally dense to very dense / stiff to hard older unit consisting of sands, gravels, clay, cobbles, and mixtures of sand and silt. Depth to groundwater varied from 15 to 65 feet below the ground surface elevation in the borings.

The State of California considers two aspects of earthquake events primary seismic hazards: surface fault rupture (disruption at the ground surface as a result of fault activity) and seismic ground shaking. There is a risk of surface rupture where the Ortigalita fault crosses the southwest corner of the county. This portion of the county in the Coast Ranges is in a seismically active region, and Alquist-Priolo earthquake fault zone maps have been prepared for two quadrangles: the Crevison Peak quadrangle and Mustang Peak quadrangle. There are no other active faults in the county.

The ground-shaking hazard in the county ranges from moderate to low. The ground-shaking hazard is highest in the western portion of the County in the Diablo Range of the Coast Ranges and becomes progressively less eastward across the county. Based on a probabilistic seismic hazard map that depicts the peak horizontal ground acceleration (PGA) values exceeded at a 10 percent probability in 50 years, the probabilistic peak horizontal ground acceleration values for the county range from 0.44g in the west to 0.14g in the east (where g equals the acceleration speed of gravity). Near the Project site the PGA is approximately 0.3g.

Secondary seismic hazards refer to seismically induced landslides, liquefaction, and related types of ground failure. Due to the seismically active nature of the proposed Project site, both liquefaction potential and dry dynamic settlement were evaluated. The preliminary liquefaction evaluation was performed using the program LiquefyPro. The preliminary results from the liquefaction evaluation show the loose sand/silt above the discrete gravel layer is susceptible to liquefaction with approximately 0.5 to over 1 inch of settlement.

Mapped soil units included in the United States Department of Agriculture Soil Survey mapping in the Project area are listed below:

- Grangeville very fine sandy loam, 0 to 1 percent slopes (GmA),
- Grangeville very fine sandy loam, slightly saline-alkali, 0 to 1 percent slopes (GnA):
- Hanford sandy loam, 0 to 3 percent slopes (HdA) and 8 to 15 percent slopes (HdC),
- Hanford fine sandy loam, 0 to 3 percent slopes (HbA),
- Hanford fine sandy loam, moderately deep over silt, 0 to 1 percent slopes (HbpA),
- Hanford sandy loam, deep over silt, 0 to 1 percent slopes (HdsA),
- Hanford very fine sandy loam, 0 to 1 percent slopes (HeA):
- Tujunga loamy sand, 0 to 3 percent slopes (TuA):

2.3.3.3 Environmental Consequences

2.3.3.3.1 Build Alternative

The proposed Project would not affect any natural geologic landmarks and landforms, nor result in loss of known mineral resources. Potential impacts are discussed below.

Faulting and Ground Shaking: The Project site does not lie within or adjacent to an Alquist-Priolo Earthquake Fault Zone. Active faulting has not been mapped as occurring across or adjacent to the Project site. The closest active fault is the Great Valley 07 (Orestimba) fault, which is located approximately 17.8 miles northwest of the Project site and is capable of generating a maximum moment magnitude earthquake (Mmax) of 6.7. Surface rupture, due to faulting within the Project site, is not expected.

The potential for surface rupture from faulting is considered low. Ground rupture and/or fault creep is not expected to occur, but some degree of ground motion is expected from seismic activity in the region. However, risk of loss, injury, or death because of seismic activity is unlikely to occur and the proposed Project is not anticipated to increase the risk to workers during construction or the traveling public during operation of the roadway.

Liquefaction and Seismic Settlement Potential: The preliminary results from the liquefaction evaluation show that portions of the soil profile with loose sand/silt above a discrete gravel layer is susceptible to liquefaction with approximately 0.5 to over 1 inch of settlement. A more detailed analysis of liquefaction potential would be required for the design of proposed bridge foundations.

Landslides and Slope Stability: The Project site has no known history of subsidence, rock falls/landslides, or embankment failures due to seismic activity, and none were observed during limited field observations and a review of available published seismic hazards for the Project area. The site is generally level, except for the bluffs at the edge of the floodplain which are underlain by generally stable soils, therefore natural slope seismic instability does not appear to be an issue within the Project limits.

Expansive Soils: Expansive soils that may swell enough to cause problems with paved surfaces are generally clays falling into the AASHTO A-6 or A-7 groups, or classified as CH, MH, or OH by the Unified Soil Classification System (USCS), and with a Plasticity Index greater than about 25 as determined by ASTM D4318. Chapter 610 of the Caltrans Highway Design Manual (2018) defines and expansive subgrade to include soils with a Plasticity Index greater than 12. The preliminary geotechnical investigation did not encounter surficial soils meeting the above criteria and expansive soils are likely not a significant concern for the Project.

AASHTO group classification is a system that classifies soils specifically for geotechnical engineering purposes that are related to highway and airfield construction. It is based on particle-size distribution and Atterberg limits, such as liquid limit and plasticity index.

AASHTO and USCS classification for the soils in the Project area are listed in Table 2.3-7. The NRCS Web Soil Survey indicates the maximum plasticity index of soils in the Project area is 9. Soils in the Project area have a low expansion potential based on the Caltrans definition.

Table 2.3-7. AASHTO and USCS soil classes for Project area

Soil Units In Project Area	**Classification**	
	AASHTO	**USDS**
Grangeville very fine sandy loam, 0 to 1 percent slopes and Grangeville very fine sandy loam, slightly saline-alkali, 0 to 1 percent slopes	A-4	ML (Inorganic slits and very fine sands, rock four, silty or clayey fine sands or clayey silts with slight plasticity)
Hanford sandy loam, 0 to 3 percent slopes (HdA) and 8 to 15 percent slopes (HdC), Hanford fine sandy loam, 0 to 3 percent slopes (HbA), Hanford fine sandy loam, moderately deep over silt, 0 to 1 percent slopes (HbpA), Hanford sandy loam, deep over silt, 0 to 1 percent slopes (HdsA),	A-4	SM (Silty sands, sand-silt mixtures)

Soil Units In Project Area	Classification	
	AASHTO	USDS
Hanford very fine sandy loam, 0 to 1 percent slopes (HeA):	A-4	ML (Inorganic slits and very fine sands, rock four, silty or clayey fine sands or clayey silts with slight plasticity)
Tujunga loamy sand, 0 to 3 percent slopes	A-1	SM (Silty sands, sand-silt mixtures)

The Project is being designed in accordance with the special engineering or construction considerations outlined in Chapter 610 "Engineering Considerations" of the Highway Design Manual, California Transportation Department. The Project is being designed in accordance with the Caltrans Highway Design Manual and would consider and address expansive soils.

2.3.3.3.2 No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed improvements and therefore would not directly or indirectly impact geologic, soil, seismic, or topographic resources.

2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of GEO-1 would reduce potential liquefaction and seismic settlement potential.

Measure GEO-1 (Liquefaction and Seismic Settlement)

- The potential for liquefaction and seismic settlement will be analyzed during design of the bridge and roadway based on the results of the design geotechnical investigation. Bridge foundations and roadways will be designed to address potential liquefaction potential and will meet applicable requirements for design of these features including those in the AASHTO LRFD Bridge Design Specifications and the Caltrans Highway Design Manual.

2.3.4 Paleontology

2.3.4.1 Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils.

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

- 16 United States Code (USC) 461-467 established the National Natural Landmarks (NNL) program. Under this program property owners agree to protect biological and geological resources such as paleontological features. Federal agencies and their agents must consider the existence and location of designated NNLs, and of areas found to meet the criteria for national significance, in assessing the effects of their activities on the environment under NEPA.

- 23 United States Code (USC) 1.9(a) requires that the use of Federal-aid funds must be in conformity with all federal and state laws.

- 23 United States Code (USC) 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431-433 above and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

2.3.4.2 Affected Environment

The Primary information source for this section was the Project Paleontological Identification Report and Paleontological Evaluation Report (PIR-PER).

2.3.4.2.1 Geological Setting

The Project occurs within the Great Valley Geomorphic Province of California. The Great Valley, also known as the Central Valley or San Joaquin-Sacramento Valley, is an alluvial plain extending from the Tehachapi Mountains in the south to the Klamath Mountains in the north, a distance of about 450 miles. Located between the Sierra Nevada to the east and the Coast Ranges to the west, the valley has an average width of about 50 miles. The valley floor can be divided into four geomorphic units, dissected uplands, low alluvial plains and fans, river floodplains and channels, and overflow lands and lake bottoms. Structurally, the valley is a northwest trending elongated asymmetrical trough that been filled with a thick sequence of sediments ranging in age from Jurassic to Modern.

2.3.4.2.2 Stratigraphy

Late Holocene to modern deposits from the Tuolumne River and the upper member of the late Pleistocene Modesto Formation occur within the Project area. The middle Pleistocene Riverbank Formation has also been questionably mapped within the Project area. Although unmapped, artificial fill is likely to occur in areas of previous construction.

Tuolumne River Deposits, Late Holocene to Modern: Three terraced units of the Tuolumne River less than 5,000 years old occur within the Project area. The youngest sediments (pm4) are modern and consist of arkosic sand, silt, and gravel. These sediments occur at the lowest portion of the Tuolumne River channel and correlates with riverwash soils. The next youngest unit (pm3) includes historic sediments deposited within the past 500 years. Consisting of arkosic sand, silt, and gravel, these deposits are approximately 6 feet above the modern river. Structures present include meanders, meander scars, and

levees. The unit also correlates with Grangeville and Tujunga soils. The oldest unit (pm2) within the study area is assigned a late Holocene age and consists of arkosic sand, silt, and gravel positioned approximately 1.5 to 5 feet above the next youngest unit (pm3). This unit and correlates with Grangeville, Hanford, and Tujunga soils.

Modesto Formation, Late Pleistocene: Sediments of the Modesto Formation consist of alluvial fan facies, river terraces, floodplains, and overbank deposits. The formation is at least 9,000 years old and wood from the lower member (from a location outside the Project area) has been dated to 42,000 years old. Locally the formation has been divided into an upper and lower member. Members and units are distinguished chiefly on the basis of paleoenvironment, topographic position, expression, and degree of soil development. Both members lack erosion as they are some of the most recent terrace deposits in the area. The Modesto Formation is likely derived from the rivers it locally borders. At the type section, the Modesto Formation consists of lenticular beds of silt and sand that are commonly cross-bedded, suggesting that the sediments represent coalescing alluvial fans.

The upper member has been correlated with the Late Wisconsin Glacial Episode which spanned from approximately 30,000 years ago to 10,000 years ago. Within the study area, the upper member of the Modesto Formation includes several units, organized from youngest to oldest:

- m2e?: arkosic dune sand; correlates with Delhi and Tujunga soils

- m2-3: arkosic alluvial sand with smaller quantities of silt and gravel of third oldest/highest (phase 3) Modesto Formation river terraces along the Tuolumne River; occurs 10 to 13 feet above youngest terrace (m2-4); correlates with Hanford, Oakdale, and Tujunga soils

- m2-2: arkosic alluvial sand with smaller quantities of silt and gravel of second oldest/highest (phase 2) Modesto Formation river terraces and upper alluvial fans along the Tuolumne River; occurs 10 to 13 feet above the third oldest terrace (m2-3); correlates with Hanford, Oakdale, and Tujunga soils

- m2-1: arkosic alluvial sand, gravel, and silt of oldest/highest (phase 1) river channels, river terraces, and upper alluvial fans along the Modesto Formation Tuolumne River; occurs 10 to 13 feet above the second oldest terrace (m2-2); correlates with Hanford, Greenfield, and Oakdale soils.

Riverbank Formation, Middle Pleistocene: The middle Pleistocene Riverbank Formation underlies the lower member of the Modesto Formation. The formation is estimated at between 130,000 and 450,000 years old and has locally been divided into an upper and lower member. Only the youngest unit of the upper member (r3?) may be present within the study area. Overall the sediments of the Riverbank Formation coarsen upwards and are derived from the interior of the Sierra Nevada.

The youngest unit of the upper member (r3?) consists of arkosic alluvial sand and alluvial fan deposits. The unit occurs slightly higher than the oldest Modesto Formation terraces along the Tuolumne River and correlates with Madera and Snelling soils.

2.3.4.2.3 Paleontological Setting

Sediments in the Project vicinity date to the late Pliocene, Pleistocene, and Holocene epochs. During the Miocene Epoch, between 23 to 5 million years ago, central California was covered by deep ocean waters. Fish, seal, sea lion, walrus, dolphin, whale, and sea birds have been found in these sediments along with numerous marine invertebrate species.

During the Pliocene Epoch, between 5 to 2.6 million years ago, the level of the ocean fell and this area transitioned to a shallow marine environment. Many present-day genera of marine animals appeared during this time. Terrestrial animals were occasionally washed into the ocean via rivers and streams.

During the Pleistocene Epoch, between 2.6 million and 12 thousand years ago, this area transitioned from shallow marine to terrestrial as the ocean receded farther. During glacial intervals, the developing terrestrial landscape had a climate that was cooler and damper than the present. Free flowing streams and relatively abundant standing water supported vegetation that today is typical of northern California. Megafauna present in the region included mammoth, mastodon, horse, camel, antelope, peccary, wolf, and saber cat. While the Ice Age megafauna became extinct at the end of the Pleistocene, most of the smaller animal species survived into the present (Holocene).

2.3.4.2.4 Records Search

A records search was requested from the University of California Museum of Paleontology (UCMP) for fossil localities within a one-mile radius of the Project but no response was received. Online database records including those of the California Academy of Sciences, the Paleobiological Database, and the UCMP, as well as published and unpublished materials were searched. Additional resources searched included prior paleontological reports from the and their associated records searches conducted with the UCMP at UC Berkeley, and database searches of the United States Geological Survey and the California State University at East Bay. The record search results indicate that no previous fossil localities have been recorded within the study area, however fossils have been found in the same formations in the vicinity.

Tuolumne River Deposits, Late Holocene to Modern: At less than 5,000 years old, these sediments are too young to contain fossils of extinct animals.

Modesto Formation, Late Pleistocene: Fifteen localities from Stanislaus County have been recorded from either the Modesto Formation or Pleistocene deposits that are likely to be Modesto Formation. Fossils of Jefferson's ground sloth, Columbian mammoth, horse, bison, and camel have been recovered from these deposits. Six of these localities occur near to State Route 99 between Salida and the Tuolumne River.

In Merced County, between Merced and Chowchilla, 1,667 fossils were recovered from 39 localities in the Modesto Formation. Except for one locality found in a paleosol, all fossils were recovered from sandy stream, adjacent slow-moving water, and overbank environments. Most fossils were not recovered from the streams themselves but instead were from the slow-moving water sediments. The presence of abundant root traces and calcified roots document that plants were present in the areas adjacent to the streams where fossils were recovered. Large mammals identified include Harlan's ground sloth, Columbian mammoth, at least two species of horse, ancient bison, yesterday's camel llama, and deer. In addition, partial specimens were assigned to a fossil elephant, probably mammoth, and horse, camel, or bison. Carnivores identified include dire wolf, coyote, and cougar.

Riverbank Formation, Middle Pleistocene: The Riverbank Formation in Stanislaus County has produced the fossil of a Harlan's ground sloth. In Sacramento County, the Riverbank Formation has produced fossils of Harlan's ground sloth, Columbian mammoth, horse, yesterday's camel, ancient bison, antelope, deer, dire wolf, coyote, rabbit, pocket gopher, woodrat, squirrel, broad-footed mole, gartersnake, and Sacramento blackfish. In Fresno County the Riverbank Formation has produced fossils of horse. Although the UCMP records 231 fossils from the Riverbank Formation at the Fairmead Landfill in Madera County, these fossils have been subsequently reassigned to the Turlock Lake Formation.

2.3.4.2.5 Survey Methods

The purpose of the survey was to assess the potential for project sediments to contain fossil resources and to ground-truth the geological maps of the study area. All undeveloped ground surface areas that were proposed for impacts within the proposed study area were examined for fossils. Any areas of hardscaping and landscaping were excluded from the survey. Portions of the Project where potentially fossiliferous sediments were present at the surface or where existing ground disturbances (e.g., cutbanks, ditches, animal burrows, etc.) incised into potentially fossiliferous sediments were intensely surveyed. Surveys were conducted May 13th to 17th, 2019.

2.3.4.3 Environmental Consequences

2.3.4.3.1 Build Alternative

Survey Results: No fossil resources were observed during the survey, although the sediments of the Modesto Formation appear favorable for the preservation of fossils due to the fine-grained nature. In all areas of current or prior agriculture, the uppermost sediments had been disced. Discing mixes the sediment, obscuring stratigraphic and paleoenvironmental indicators, and damages non-lithified fossils. Observed sediments of the Tuolumne River were tan to light gray, unconsolidated, silt-rich, very fine to very coarse-grained sands. The Riverbank Formation was inaccessible during the survey.

Paleontological Sensitivity: Paleontological resources are considered to be scientifically important if they provide new data on fossil animals, distribution, evolution, or other scientifically important information. Knowledge of the geological formations gleaned from the survey and records of previous fossils recovered from the area are the basis for determining

the paleontological sensitivity of projects. The Department utilizes a three-part scale to characterize paleontological sensitivity (Table 2.3-8).

Table 2.3-8. Caltrans Paleontological Sensitivity Scale

Caltrans Sensitivity	Description
High Potential	Rock units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils. These units include, but are not limited to, sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units. Fossiliferous deposits with very limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and ranked as highly sensitive.
Low Potential	This category includes sedimentary rock units that: 1) are potentially fossiliferous, but have not yielded significant fossils in the past; 2) have not yet yielded fossils, but possess a potential for containing fossil remains; or 3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because vertebrates are generally rare and found in more localized stratum. Rock units designated as low potential generally do not require monitoring and mitigation. However, as excavation for construction gets underway it is possible that new and unanticipated paleontological resources might be encountered.
No Potential	Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing significant paleontological resources. For projects encountering only these types of rock units, paleontological resources can generally be eliminated as a concern.

Fossil resources occur in geologic units (e.g., formations or members). The probability for finding scientifically relevant fossils within a study area can be broadly predicted from previous records of fossils recovered from the geologic units present in and/or adjacent to the study area. The geological setting and the number of known fossil localities help determine paleontological sensitivity for the Project.

The Project surface is mapped as late Holocene to modern deposits from the Tuolumne River and the upper member of the late Pleistocene Modesto Formation. Potentially a portion of the middle Pleistocene Riverbank Formation may occur within the proposed study area. The sediments of the Tuolumne River are too young to produce fossils. Fossils are known from both the late Pleistocene Modesto Formation and six of the Modesto Formation

localities occur near State Route 99 between Salida and the Tuolumne River. Fossils are also known from the middle Pleistocene Riverbank Formation, although they are sparser.

Due to their age, Tuolumne River sediments are given a low sensitivity for fossils less than 8 feet below the original surface, while deeper sediments are given a high sensitivity.

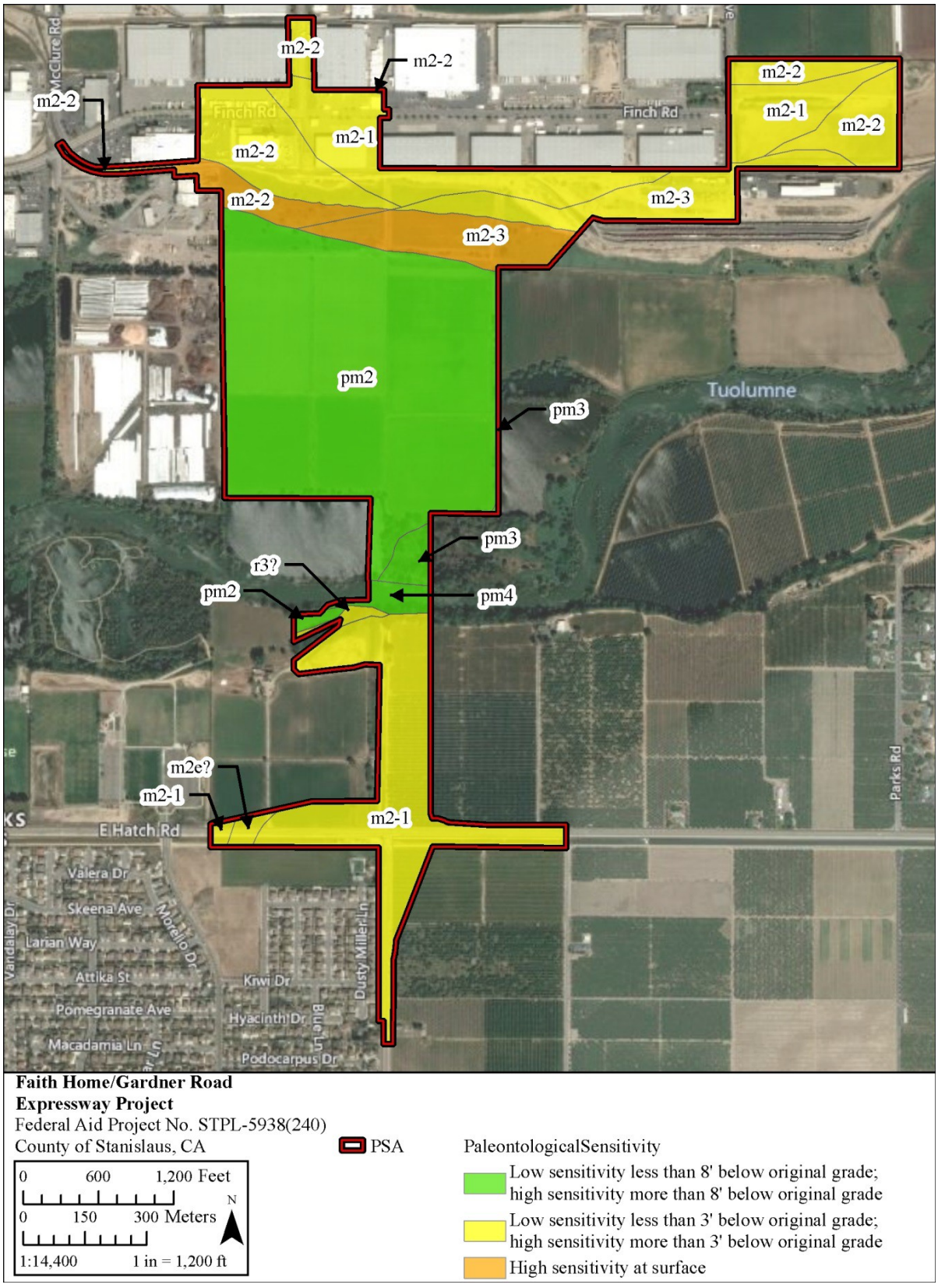
Due to the large amount of agricultural discing over the study area, both the late Pleistocene Modesto Formation and the middle Pleistocene Riverbank Formation are given a low sensitivity for fossils less than 3 feet deep, while deeper sediments are given a high sensitivity (Table 2.3-9, Figure 2.3-6). The exception to this is in areas where the impacts occur on the slope of a river terrace in late Pleistocene sediments. Since this area is unlikely to have been disced, all portions of the slope are considered high sensitivity at the surface. Also, all of the excavation for the borrow area is highly sensitive for fossils.

Table 2.3-9. Project Paleontological Sensitivity

<table>
<tr><th rowspan="2">Soil Units</th><th rowspan="2">Soil Unit Age</th><th colspan="3">Paleontological Sensitivity for Fossil Bearing</th></tr>
<tr><th>high</th><th>low</th><th>no</th></tr>
<tr><td>Tuolumne River sediments (pm4)</td><td>modern</td><td rowspan="3">more than 8 feet deep</td><td rowspan="3">less than 8 feet deep</td><td></td></tr>
<tr><td>Tuolumne River sediments (pm3)</td><td>historic</td><td></td></tr>
<tr><td>Tuolumne River sediments (pm2)</td><td>late Holocene</td><td></td></tr>
<tr><td>Modesto Formation, upper member eolian (m2e?)</td><td rowspan="4">late Pleistocene</td><td rowspan="4">more than 3 feet deep in relatively flat areas; all impacts to the slopes of terraces in these</td><td rowspan="4">less than 3 feet deep</td><td></td></tr>
<tr><td>Modesto Formation, upper member, unit 3 (m2-3)</td><td></td></tr>
<tr><td>Modesto Formation, upper member, unit 2 (m2-2)</td><td></td></tr>
<tr><td>Modesto Formation, upper member, unit 1 (m2-1)</td><td></td></tr>
<tr><td>Riverbank Formation, upper member, unit 3 (r3?)</td><td>middle Pleistocene</td><td>more than 3 feet deep</td><td>less than 3 feet deep</td><td></td></tr>
</table>

Fossils may be recovered where vertical impacts exceed 3 feet in Pleistocene deposits or 8 feet in Holocene deposits. Also the excavation for the borrow area is highly sensitive for fossils. If important paleontological vertebrate fossil resources are present in the Project area then construction activities could cause adverse impacts under NEPA and significant impacts under CEQA, such as destruction and loss of scientifically significant paleontological vertebrate fossil resources. A Paleontological Mitigation Plan is recommended for the Project.

Figure 2.3-6. Paleontological Sensitivity Map



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2.3.4.3.2 No-Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly impact paleontological resources.

2.3.4.4 Avoidance, Minimization, and/or Mitigation Measures

The following measure (PALEO-1) would be implemented to reduce impacts to potential paleontological resources.

Measure PALEO-1 (Paleontological Mitigation Plan)

- The following measures will be implemented for soil units with a high paleontological sensitivity based upon depth of excavation below original grade. These measures will be referred to as the "Paleontological Monitoring Plan."

    - The Department's Special Provision 14-7.03 and 19-1.01A for paleontology mitigation implementation will be included in the construction contract special provisions section to advise the construction contractor of the requirement to conduct paleontological salvage. A qualified paleontologist will prepare Paleontological Monitoring Plan based on 65percent design.

    - The qualified paleontologist would designate a paleontological monitor to be present during qualifying earthmoving activities, as described in the Paleontological Monitoring Plan. The paleontologist and monitors will meet the criteria identified in the Department's SER, Chapter 8 regarding paleontology.

    - The Resident Engineer will notify the qualified paleontologist in advance of the start of construction activity and would attend any safety training programs for the proposed Project. The proposed Project paleontologist would meet with the Resident Engineer and construction contractor at a preconstruction meeting to develop an agreed upon communication plan and provide for worker safety. All project personnel involved with excavation or drilling activities in paleontologically sensitive areas will receive a paleontological awareness training session prior to commencement of work.

    - If paleontological resources are discovered during earthmoving activities, the construction crew would immediately cease work within a 60-foot radius of the find, and immediately notify the Resident Engineer. In the event that paleontological resources are discovered, fossil specimens would be properly collected and sufficiently documented to be of scientific value.

    - For sediments containing microfossils (pollen, freshwater ostracods), the monitor would take bulk samples for off-site processing at a later time to recover any fossils. Oriented samples must be preserved for paleomagnetic

analysis. Samples of fine matrices would be obtained and stored for pollen analysis.

- Macro fossils (large enough to view with the unaided eye) could include tusks and other vertebrate remains. Some of these resources may be fragile and require hardening before moving, and may require encasing within a plaster jacket for later preparation and conservation in a laboratory. Recovered specimens would be prepared for identification (not exhibition) and stabilized. Specimens would be identified by competent qualified specialists to a point of maximum specificity. Ideally, identification is of individual specimens to element, genus, and species.

- Where appropriate, specimens would be analyzed by stratigraphic occurrence, and by size, taxa, or taphonomic conditions. The results would be presented in a faunal list, a stratigraphic distribution of taxa, or evolutionary, ecological, or depositional deductions.

- Adequate storage in a recognized repository institution for the recovered specimens would be required. Specimens would be cataloged and a complete list would be prepared of specimens introduced into the collections or a repository by the curator of the museum or university.

- Upon the completion of excavation and/or drilling activities in paleontologically sensitive areas, the paleontologist will prepare a Paleontological Monitoring and Findings Report summarizing the results of the monitoring. The report will a summary of the field and laboratory methods, site geology and stratigraphy, faunal list, and a brief statement of the significance and relationship of the site to similar fossil localities. Full copies of the final Paleontological Monitoring and Findings Report will be deposited with the repository institution.

2.3.5 Hazardous Waste/ Materials

2.3.5.1 Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, and the Resource Conservation and Recovery Act (RCRA) of 1976. The purpose of CERCLA, often referred to as “Superfund,” is to identify and cleanup abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for “cradle to grave” regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992

- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

2.3.5.2 Affected Environment

The primary information source for this section was the Project's Initial Site Assessment (ISA, October 2019) and Preliminary Site Investigation-Aerially Deposited Lead Study (PSI-ADL, October 2019).

The purpose of the ISA is to assess potential risks posed by hazardous materials in the Project area to environmental resources and human health. The report presents the results of the ISA, including regulatory records searches, file reviews, historical database reviews, a site reconnaissance, and recommendations. The ISA identified the following potential Recognized Environmental Conditions (RECs):

- Potential sources of aerially-deposited lead (ADL) within exposed soil along the roadways, from auto emissions before leaded fuel was banned;

- Potential organochlorine pesticides, chlorinated herbicides, and metals (CAM 17 Metals) from the agricultural fields surrounding the Project area;

- Potential polynuclear aromatic hydrocarbons (PAH), semi-volatile organic compounds (SVOC), and metals near the railroad track area (north side of the proposed bridge);

- Potential for asbestos-containing material (ACM) in concrete aggregate of the Ceres Canal, Ceres Canal Bridge, and concrete spillway; and

- Potential for lead-based paint (LBP) on painted surfaces of the concrete bridge and canal, and yellow traffic striping on the roadway and bridge deck.

The ISA concludes by recommending a PSI - ADL Study be conducted based on the potential RECs identified. The PSI-ADL Study was performed to verify the presence/absence of RECs, to evaluate the available options for soil disposal or reuse, and to provide specific guidance for waste management and worker safety during construction.

2.3.5.1 Environmental Consequences

2.3.5.1.1 Build Alternative

Results of the PSI-ADL Study indicate that the soil in the Project area contains detectable concentrations of metals (arsenic and lead), pesticides, PAHs, and SVOCs, however, the concentrations are below the threshold limits and the soil can be pre-classified as Non-Hazardous. Worker safety measures should follow Cal/OSHA regulations to limit exposure and hazards to construction workers during soil disturbance for the bridge construction.

The Ceres Canal Bridge structural samples did not contain ACM. LBP was detected in the yellow traffic striping sample (LBP-3), that would need to be disposed of at a Class I Landfill. Table 2.3-10 provides a summary of recommendations from the PSI-ADL Study.

Table 2.3-10. Summary of Recommendations

Material	Description	Recommended Actions
Arsenic in shallow soil	Detectable arsenic concentrations in shallow soil within the Project footprint, did not exceed 10 times the Soluble Threshold Limit Concentration (STLC) regulatory limit (50 mg/L) and is pre-classified as Non-Hazardous. However, the arsenic concentrations in soil exceeded all the RWQCB Environmental Screening Levels (ESLs).	Worker Safety would need to include exposure to arsenic in soil (above RWQCB ESL levels). Dispose of excavated soils as Non-hazardous waste at Class II unit or Class III landfill depending on facility acceptance standard. • Department of Toxic Substance Control (DTSC) – *Arsenic Strategies, Determination of Arsenic Remediation, Development of Arsenic Cleanup Goals*. January 16, 2009.

Material	Description	Recommended Actions
		http://www.dtsc.ca.gov/AssessingRisk/upload/Arsenic-Cleanup-Goals- Jan09.pdf
ADL in shallow soil	Detectable lead concentrations in shallow soil within the Project footprint, did not exceed 10 times the STLC regulatory limit (50 mg/L) and is pre-classified as Non-Hazardous. The ADL concentrations in soil did not exceed RWQCB ESLs.	Worker Safety would need to include ADL in soil (below RWQCB ESL levels). Manage ADL waste per: • **SSP 7-1.02K(6)(j)(iii) (10/19/2018) - Earth Material Containing Lead** - Requires a lead compliance plan for soil disturbance when lead concentrations are non-hazardous.
Yellow traffic striping	One sample had a detectable concentration of 1,080 ppm, which is above the California (AB-414 Chapter 861) threshold of 350 ppm and needs to be disposed of at a Class I Hazardous Waste Facility. The proposed bridge would extend to the Ceres Canal Bridge, and roadway improvements may require the removal/disposal of yellow traffic striping. Yellow paints made prior to 1995 may exceed hazardous waste criteria under Title 22 California Code of Regulations (CCR) and require disposal in a Class I disposal site.	Abate lead-based paint prior to roadway demolition. • **SSP 14-11.12 (10/19/2018) – Remove Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue** – Requires proper management of hazardous waste residue and a lead compliance plan.
Concrete and Asphalt waste	Asphalt and concrete grindings are potentially hazardous waste, that would be generated during bridge approach construction. Load bearing concrete components of the Ceres Canal and Canal Bridge may contain asbestos as a strengthening agent. Asbestos was not detected in	• All asphalt concrete (AC) materials should be recycled per the Caltrans directive for reclaimed AC (AB 1306), in accordance with the January 27, 1993 Memorandum on “Department of Fish and Game Agreement on AC Grindings, Chunks and Pieces” • Caltrans Asphalt-Concrete and Portland Cement Concrete Grindings Reuse Guidance (2007). • **SSP 60-2.01A (10/19/2018)** - Use for removing structures or portions

Material	Description	Recommended Actions
	concrete samples analyzed from the Ceres Canal and Bridge.	of structures, including bridges, retaining walls, sound walls, and other concrete or masonry structures. • **SSP 60-2.02 (10/19/2018)** - Use for bridge removal work. • **SSP 60-3.02C (3) (10/19/2018)** - Use for removing asphalt concrete surfacing from bridges. • Concrete waste should be reclaimed and recycled as appropriate.
Wooden utility poles along the roadways - treated wood waste	High potential presence of hazardous chemicals used to treat wooden railings on the bridge.	Manage as treated wood waste according to: • **SSP 14-11.14 (10/19/2018)** - Treated Wood Waste; and • DTSC's Treated Wood Waste Alternative Management Standard (22 CCR Chapter 34).
Shallow soils close to Railroads	Detectable concentrations of PAHs, CAM 17 metals, and one SVOC were identified in shallow soils in the Project area due to railroad tracks. The concentrations from the soil samples did not exceed ESLs and are not indicative of hazardous waste.	Worker Safety should be considered when construction in the area of railroad tracks would expose workers to PAHs, CAM 17 metals, and SVOCs in the soil. Dispose of excavated soils as Non-hazardous waste at Class II unit or Class III landfill depending on facility acceptance standard.
Utility pole-mounted electrical transformers within Project area.	There are potential polychlorinated biphenyls in pole-mounted electrical transformers along the Project roadways for approaches to the proposed bridge.	Have PG&E manage the electric lines and transformers. Abate transformers prior to construction of bridge approaches on roadways

2.3.5.1.2 No Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly result in impacts related to hazardous waste or hazardous materials.

2.3.5.2 Avoidance, Minimization, and/or Mitigation Measures

Implementation of the measures below would reduce potential impacts to workers and public health and safety

Measure HAZ-1 (Worker Safety, Waste Handling and Disposal)

- The construction contract will require all on-site personnel comply with standards found in the Construction Safety Orders and General Industry Safety Orders as defined by Cal/OSHA. Applicable worker safety standards include:
    - Exposure to arsenic in soil (above RWQCB ESL levels).
    - Exposure to ADL in soil (below RWQCB ESL levels)
    - Exposure to PAHs, CAM 17 metals, and SVOCs in the soil (specifically in the area of the existing M&ET railroad tracks.
- **Arsenic in Shallow Soil and Shallow Soil Close to M&ET Railroad Tracks:**
    - Dispose of excavated soils as Non-hazardous waste at Class II unit or Class III landfill depending on facility acceptance standard.
- **ADL in Shallow Soil:** The construction contract will require implementation of the following Department standard special provisions (SSP) and standard specifications:
    - *SSP 7-1.02K(6)(j)(iii) (10/19/2018) - Earth Material Containing Lead:* Requires a lead compliance plan for soil disturbance when lead concentrations are non-hazardous.
- **Yellow Traffic Striping:** Abate lead-based paint prior to roadway demolition with implementation of the following applicable Department SSP's.
    - *SSP 14-11.12 (10/19/2018) – Remove Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue:* Requires proper management of hazardous waste residue and a lead compliance plan.
    - *Based on the traffic striping sample from the Faith Home Road - Ceres Bridge (over the Ceres Canal), lead containing paint (LCP) exceeded the total threshold limit concentration (TTLC) for lead (1,000 mg/kg), which pre-classifies the striping as hazardous toxic waste (per CCR Title 22, Chapter 11,*

Article 3). Therefore, yellow traffic striping along the southern portion of the proposed bridge should be disposed of at a permitted Class I disposal facility.

- *Paint used for traffic lane striping on the street intersections (E Hatch Road and Faith Home Road and Garner Road and Finch Road), should be tested for LCP prior to demolition/removal to determine proper handling and disposal methods during project construction. If lead is detected, then appropriate procedures will be included in the Construction Implementation Plan to avoid contact with these materials or generation of dust or vapors.*

- **Concrete and Asphalt Waste:**

  - All asphalt concrete (AC) materials would be recycled per the Caltrans directive for reclaimed AC (AB 1306), in accordance with the January 27, 1993 Memorandum on "Department of Fish and Game Agreement on AC Grindings, Chunks and Pieces"

  - Adhere to Caltrans Asphalt-Concrete and Portland Cement Concrete Grindings Reuse Guidance (2007).

  - Reclaim and recycle concrete waste as appropriate.

  - The construction contract will require implementation of the following Department SSP's:

    - *SSP 60-2.01A (10/19/2018)*: Use for removing structures or portions of structures, including bridges, retaining walls, sound walls, and other concrete or masonry structures.

    - *SSP 60-2.02 (10/19/2018):* Use for bridge removal work.

    - *SSP 60-3.02(C 3) (10/19/2018):* Use for removing asphalt concrete surfacing from bridges.

- **Treated Wood Waste:** The construction contract will require the treated wood waste will be managed in accordance with the following Department SSP's:

  - SSP 14-11.14 (10/19/2018) - Treated Wood Waste; and

  - California Department of Toxic Substance Control (DTSC) Treated Wood Waste Alternative Management Standard (22 CCR Chapter 34).

- **Electrical Transformers within Project Area**

  - Coordinate with PG&E to determine potential polychlorinated biphenyls in pole-mounted electrical transformers along the Project roadways.

- o If present abate transformers prior to construction of bridge approaches on roadways.

2.3.6 Air Quality

2.3.6.1 Regulatory Setting

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM)—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$)—and sulfur dioxide (SO2). In addition, national and state standards exist for lead (PB), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition. Table 2.3-11 documents the current air quality standards while Table 2.3-12 summarizes the sources and health effects of the six criteria pollutants and pollutants regulated in the state of California.

Table 2.3-11. Table of State and Federal Ambient Air Quality Standard

Ambient Air Quality Standards						
Pollutant	**Averaging Time**	**California Standards** [1]		**National Standards** [2]		
		Concentration [3]	**Method** [4]	**Primary** [3,5]	**Secondary** [3,6]	**Method** [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing	8 Hour	See footnote 14	Beta Attenuation and Transmittance through	**No**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography	**National**		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography	**Standards**		

See footnotes on next page …

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3. The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
12. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
13. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
14. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
15. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Table 2.3-12. Principal Health and Atmospheric Effects by Pollutant

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Ozone (O3)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
Respirable Particulate Matter (PM10)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic and other aerosol and solid compounds are part of PM10.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.
Fine Particulate Matter (PM2.5)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the PM2.5 size range. Many toxic and other aerosol and solid compounds are part of PM2.5.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.
Carbon Monoxide (CO)	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on- road mobile sources at the local and neighborhood scale.
Nitrogen Dioxide (NO2)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the “NOx” group of ozone	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
Sulfur Dioxide (SO2)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
Lead (Pb)	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.
Visibility-Reducing Particles (VRP)	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other “Class I” areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.
Sulfate	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.
Hydrogen Sulfide (H2S)	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.
Vinyl Chloride	Neurological effects, liver damage, cancer. Also considered a toxic air	Industrial processes.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

Conformity

The conformity requirement is based on FCAA Section 176(c), which prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to State Implementation Plan (SIP) for attaining the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the project level. The proposed Project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), sulfur dioxide (SO_2). California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of RTPs and FTIPs that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and FTA make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP; the Project has a design concept and scope that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and EPA-approved emissions models; and in PM areas, the Project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts. Design concept means the type of facility that

is proposed, such as a freeway or arterial highway. Design scope refers to those aspects of the Project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the Project.

The California Environmental Quality Act (CEQA) requires environmental impacts of a proposed Project be identified, assessed, and avoided or mitigated as feasible, if these impacts are significant. The San Joaquin Valley Air Pollution Control District (SJVAPCD) requires projects within its boundaries to undergo an evaluation of assessing potential air quality impacts. The SJVAPCD provides a guidance document "Guidance for Assessing and Mitigating Air Quality Impacts" (GAMAQI), that outlines procedures for assessing potential air quality impacts of proposed projects and for preparing the air quality section of environmental documents. The proposed Project would assess air quality impacts for CEQA purposes by demonstrating that construction and operation emissions are below established thresholds levels as shown in Table 2.3-13.

Table 2.3-13. Thresholds of Significance for Criteria Pollutants

Pollutant/ Precursor	Construction Emissions (tons/year)	Operational Emissions (tons/year)	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

In addition, the SJVAPCD's Indirect Source Rule (ISR) 9510 is intended to reduce a project's impact on air quality through project design elements or mitigation by payments of applicable off-site mitigation fees. The ISR rule applies to any transportation or transit project where construction exhaust emissions equal or exceed two (2.0) tons NOx or two (2.0) tons of PM10. For construction emissions, the annual emissions are evaluated on a rolling 12 month period and compared to the established threshold levels in Table 2.3-13. Operational emissions are considered to be below established threshold levels for transportation projects, if the project is included as part of the StanCOG RTP.

The district has instituted fugitive dust requirements under Regulation VIII (Reg. VIII) that require projects to take actions to reduce ambient concentrations of fine particulate matter (PM10). Regulation VIII requires property owners, contractors, developers, equipment operators, farmers and public agencies to control fugitive dust emissions from specified outdoor fugitive dust sources. Regulation VIII specifies the following measures to control fugitive dust:

- Apply water to unpaved surfaces and areas.

- Use non-toxic chemical or organic dust suppressants on unpaved roads and traffic areas Limit or reduce vehicle speed on unpaved roads and traffic areas.

- Maintain areas in a stabilized condition by restricting vehicle access.

Further, SJVAPCD requires projects that cause an increase in traffic volumes to undergo a CO hotspot modeling analysis. Hotspot modeling analysis evaluates CO concentrations at intersections of high volume and LOS (D or worse) to demonstrate that the project would not worsen air quality within the Districts' boundaries.

2.3.6.2 Affected Environment

The Primary information source for this section was the Project Air Quality Report (February 2021).

2.3.6.2.1 Climate, Meteorology, and Topography

The San Joaquin Valley (SJV) has an "inland Mediterranean" climate, characterized by hot, dry summers and cool winters. On average, the valley experiences more than 260 sunny days per year. Summer high temperatures often exceed 100 degrees Fahrenheit, averaging in the low 90s in the northern valley and high 90s in the south. The daily summer temperature can vary as much as 30 degrees. Winters are mild and humid with average high temperatures in the 50s, but highs in the 30s and 40s can occur on days with persistent fog and low clouds. The average daily low temperature is 45 degrees Fahrenheit.

Air pollution is influenced by a region's topographic features. The San Joaquin Valley Air Basin (SJVAB) is defined by the Sierra Nevada mountains in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 8,000 feet in elevation). The valley opens to the sea at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay.

Wind speed and direction play an important role in dispersion and transport of air pollutants. The SJVAB experiences differing wind regimes in the summer and winter. During the summer, winds usually originate at the north end of the SJV and flow in a south-southeasterly direction through the SJV, through Tehachapi pass, and into the Southeast Desert Air Basin. During the winter, winds occasionally originate from the south end of the SJV and flow in a north-northwesterly direction. Also, during the winter months, the SJV experiences light, variable winds less than 10 mph. Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high CO and PM10 concentrations

The vertical dispersion of air pollutants in the SJVAB is limited by the presence of persistent temperature inversions. Because of expansional cooling of the atmosphere, air temperature usually decreases with altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Inversions can exist at the surface, or at any height above the ground. Air above and below the inversion base does not

mix because of differences in air density. Inversion layers are significant in determining ozone formation and CO and PM10 concentrations.

Precipitation and fog tend to reduce or limit some pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog block the required radiation. CO is slightly water-soluble, so precipitation and fog tend to reduce atmospheric CO concentrations. PM10 is also somewhat "washed" from the atmosphere by precipitation.

Precipitation in the SJV is strongly influenced by the position of the semi-permanent subtropical high-pressure belt located off the Pacific coast referred to as the Pacific High. In the winter Pacific storms move through the SJV. The majority of the precipitation falling in the SJV is produced by those storms during the winter. Precipitation during the summer months is in the form of convective rain showers and is rare. Average annual rainfall for the entire SJV is 9.25 inches on the SJV floor.

Between winter storms, high pressure and light winds allow cold moist air to pool on the SJV floor. This creates strong low-level temperature inversions and very stable air conditions. This situation leads to the SJV's famous "Tule Fog".

2.3.6.2.2 Existing Air Quality Conditions

The California Environmental Protection Agency's (CalEPA) Air Resources Board (ARB) air quality monitoring program collects accurate real-time measurements of ambient level pollutants at over 40 sites located throughout the state. The closest ARB air quality monitoring station to the project is located on 14th Street in Modesto. A summary of 2013-2017 monitoring data from this station is included in Table 2.3-14. Ambient nitrogen dioxide concentration is not monitored at the Modesto station. The nearest station that monitors nitrogen dioxide is in Turlock. Nitrogen dioxide data from the Turlock station is shown in Table 2.3-14. Ambient sulfur dioxide concentration is not monitored at the Modesto station. The nearest station that monitors sulfur dioxide is located in Fresno, which is not near the affected area of the project. Accordingly, Table 2.3-14 does not include sulfur dioxide data. The data in Table 2.3-14 were compiled from the California Air Resources Board's iADAM: Air Quality Data Statistics.

Table 2.3-14. Air Quality Concentrations for the Past 5 Years

Pollutant	Standard	2013	2014	2015	2016	2017
Ozone (data from Modesto Station)						
Max 8-hr concentration	State	0.082	0.091	0.093	0.092	0.098
	Federal	0.082	0.090	0.093	0.091	0.098
No. days exceeded: State	0.070 ppm	13	24	24	22	23
Federal	0.070 ppm	13	24	23	21	12
Carbon Monoxide (data from Modesto Station)						
Max 1-hr concentration	State	N/D	N/D	N/D	N/D	N/D
	Federal	N/D	N/D	N/D	N/D	N/D

Pollutant	Standard	2013	2014	2015	2016	2017
No. days exceeded: State Federal	20 ppm 35 ppm	N/D	N/D	N/D	N/D	N/D
Max 8-hr concentration	State	N/D	N/D	N/D	N/D	N/D
	Federal	N/D	N/D	N/D	N/D	N/D
No. days exceeded: State Federal	9 ppm 9 ppm	N/D	N/D	N/D	N/D	N/D
PM_{10} (data from Modesto Station)						
Max 24-hr concentration	State	98.8	127.7	90.3	81.5	128.9
	Federal	73.0	122.5	85.6	83.5	129.3
No. days exceeded: State Federal	50 µg/m^3 150 µg/m^3	58 *0*	38 *0*	31 *0*	N/A *0*	58 *0*
Max Annual concentration	State	30.9	29.6	27.7	N/A	31.1
No. days exceeded: State	20 µg/m^3	N/A	N/A	N/A	N/A	N/A
$PM_{2.5}$ (data from Modesto Station)						
Max 24-hr concentration		83.2	58.2	44	53.3	74.5
No. days exceeded: Federal	35 µg/m^3	38	17	N/A	9	25
Max annual concentration		14.2	11.3	N/A	11.1	12.8
No. days exceeded: State Federal	12 µg/m^3 12 µg/m^3	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A
Nitrogen Dioxide (data from Turlock Station)						
Max 1-hr concentration	State	54	55	42	47.2	58.6
	Federal	54	55	42	47	58
No. days exceeded: State Federal	0.18 ppm 100 ppb	0 0	0 0	0 0	0 0	0 0
Max annual concentration		11	N/D	N/D	N/D	N/D
No. days exceeded: State Federal	0.03 ppm 53 ppb	*N/D* *N/D*	*N/D* *N/D*	*N/D* *N/D*	*N/D* *N/D*	*N/D* *N/D*

N/D- No Data
N/A- Not Available

As shown in Table 2.3-14, levels of ozone exceeded the state and federal 8-hour standards on multiple days in all five years. Levels of PM10 exceeded the state 24-hour standard on multiple days in the period of 2013-2017. Levels of PM2.5 exceeded the federal 24-hour standard on multiple days in all years in which data was available. The area surrounding the project did not exceed the state or federal standards for nitrogen dioxide in the period of 2013–2017.

Mobile Source Air Toxics: EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non- cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA). These compounds are1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. Sources of these compounds within the Project area may result from on and off-road motor vehicles travelling within the Project area. There are no nearby monitoring stations that provide concentration levels of these nine mobile air toxic emissions. The Project area is considered an area of no meaningful mobile source toxic air emissions.

Sensitive Receptors: Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. Air quality problems arise when sources of air pollutants and sensitive receptors are located near one another. The Project is not located within 1,000 feet of a hospital, school, or convalescent facility. Land use within and around the Project area includes commercial, industrial, residential, and open land/agricultural.

Attainment Status: State law requires the ARB to designate areas of the state as attainment, nonattainment, nonattainment-transitional, or unclassified for each California Ambient Air Quality Standard (CAAQS). An area is designated attainment for a given criteria pollutant if the state standard for that pollutant was not violated at any site in the area during a three- year period. An area is designated nonattainment for a given pollutant if there was at least one violation of a state standard for that pollutant in the area. A pollutant is designated nonattainment-transitional if the area is close to attaining the standard for that pollutant. A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment. To identify the severity of the problem and the extent of planning required, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).

The size of the CAAQS designated areas may vary depending on the pollutant, the location of contributing emission sources, the meteorology, and the topographic features. Currently, areas for ozone, nitrogen dioxide, PM10, sulfates, and visibility reducing particles are designated at the air basin level. Areas for carbon monoxide, sulfur dioxide, lead, and hydrogen sulfide are designated at the county level. Each year, the Board reviews the area designations and updates them as appropriate, based on the three most recent complete and validated calendar years of air quality data.

The Federal Clean Air Act requires the EPA to designate areas as attainment, nonattainment, or unclassified for the National Ambient Air Quality Standards (NAAQS). These designations are similar to their state-level counterparts. Areas that were nonattainment but have recently achieved attainment are referred to as maintenance areas.

Table 2.3-15 provides a summary of the NAAQS and CAAQS attainment status in the vicinity of the Project. The SJVAB is in nonattainment for federal ozone and PM2.5 standards.

Table 2.3-15. State and Federal Attainment Status.

Pollutant	Federal	State
8-hour Ozone (O3)	Non-Attainment	Non-Attainment
Carbon Monoxide (CO)	Attainment (Maintenance)	Unclassified/Attainment
Particulate Matter (PM10)	Attainment (Maintenance)[a]	Non-Attainment
Particulate Matter (PM2.5)	Non-Attainment[b]	Non-Attainment
Sulfur Dioxide (SO2)	Attainment	Attainment
Nitrogen Dioxide (NO2)	Attainment	Attainment
Hydrogen Sulfide (H2S)	No Federal Standard	Unclassified
Lead	No Federal Standard	Attainment
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

[a] On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.

[b] The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).

Within the Project area, NO2, SO2, and Pb are currently in attainment with federal and state standards while PM2.5 and Ozone are designated as nonattainment. The EPA redesignated the Basin as a maintenance area for CO in 1996 and PM10 in 2008. The Basin continues to maintain the CO emissions throughout the area and is within attainment of federal and state standards.

Conformity Status: The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs or projects that do not conform to the SIP for attainting the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional—or, planning and programming— level and the project level. The proposed Project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional level conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for CO, NO2, ozone, PM10, PM2.5, and in some areas (although not in California) SO2. California has attainment or maintenance areas for all of these transportation-related criteria pollutants except SO2, and also has a nonattainment area for Pb; however, Pb is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emissions analysis of the RTP and FTIP that include all transportation projects planned for a region over a period of at least 20 years for the RTP and 4 years for the FTIP. RTP and FTIP conformity determinations use travel demand and emissions models to determine whether or not the implementation of those projects would conform to emissions budgets or other tests at various analysis years showing that requirements of the Clean Air Act and the SIP are met.

If the conformity analysis is successful, the MPO, FHWA, and FTA, make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project is the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the Project is included in the regional conformity analysis and a "hot-spot" analysis if an area is "nonattainment" or "maintenance" for CO, PM10 and/or PM2.5. A region is "nonattainment" if one or more of the monitoring stations in the region measures a violation of the relevant standard and the EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by EPA and are then called "maintenance" areas. "Hot-spot" analysis is essentially the same, for technical purposes, as CO or PM analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot-spot analysis. In general, projects must not cause the "hot-spot" related standard to be violated and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or PM violation is located in the Project vicinity, the Project must include measures to reduce or eliminate the existing violation(s) as well.

2.3.6.3 Environmental Consequences

2.3.6.3.1 Build Alternative

Construction Impacts: Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Fugitive dust is emitted both during construction activities and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities are major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate substantial dust emissions. Further, dust generation is dependent on soil type and soil moisture.

Adverse effects of construction activities include increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties

or previously completed developments surrounding or within the Project area and may require frequent washing during the construction period. Further, asphalt- paving materials used during construction would present temporary, minor sources of hydrocarbons that are precursors of ozone.

Project construction is anticipated to take two years. The Project's construction emissions were estimated using the Roadway Construction Emissions Model by the Sacramento Metropolitan Air Quality Management District, which is the accepted model for all CEQA roadway projects throughout California. As summarized in Table 2.3-16, construction activities from the Project are similar between all Build alternatives. Construction emissions are not expected to exceed significance threshold levels established by the SJVAPCD.

Table 2.3-16. Construction Emissions and Local Significance Thresholds

Pollutants	Project Construction Emissions (tons/year)[1] Phase 2 (Full Build Out)	SJVAPCD AQ Significance Thresholds (tons/year)
NOx	0.81	10
ROG	0.31	10
PM10	9.3	15
PM2.5	2.0	15
CO	6.3	100
SOx	0.01	27

[1] Results presented from the Road Construction Emission Model are for one 12-month period only.

Naturally Occurring Asbestos (NOA): Based on review of the 2000 California Department of Conservation map, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring*, ultramafic rock is not mapped in north-central Stanislaus County and therefore NOA is not expected to occur at the project site.

Operational Impacts:

Conformity: The proposed Project is located in an area designated nonattainment for federal ozone and PM2.5 standards. The area is also designated maintenance/ attainment for CO and PM10. As such, the Project is not exempt from conformity per 40 CFR 93.126 or 40 CFR 93.128. Further, the Project is not exempt from regional conformity per 40 CFR 93.127.

Regional Conformity: The proposed Project is included in the StanCOG financially constrained 2021 FTIP (project identification number RSTPSC01 and 21400000695), and the fiscally constrained 2018 RTP/SCS (project identification numbers SC78 and C14 for the signalization of Faith Home Road and Hatch Road intersection). The StanCOG 2021 FTIP and 2018 RTP were found to conform by StanCOG on 17 February 2021. The design concept and scope of the proposed Project is consistent with the project

description in the 2018 RTP, 2021 FTIP, and the “open to traffic” assumptions of the StanCOG Air Quality Conformity Analysis. approved by FHWA on 16 April 2021.

The Faith Home Road and Garner Road Expressway was included in the regional emissions analysis conducted by StanCOG for the conforming 2018 RTP/SCS. The plan is in conformity, and therefore, the individual projects contained in the plan are conforming projects and would have air quality impacts consistent with those identified in the state implementation plans (SIPs) for achieving the National Ambient Air Quality Standards (NAAQS).

Project Level Conformity - Particulate Matter: The Project is subject to PM conformity analysis because it is located within a PM2.5 nonattainment area and a PM10 attainment/maintenance area. The Project is not considered a project of air quality concern (POAQC) as shown in Table 2.3-17.

Table 2.3-17. Projects of Air Quality Concern Explanation

EPA Definition of a POAQC	Proposed Project
(i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;	The most heavily traveled segment of the project is Faith Home Road north of Hatch Road. The highest AADT volumes are 29,900 and 43,670 for 2025 and 2045, respectively, for Phase 1. The resultant diesel truck volumes are 3.9% of the total AADT. Diesel truck AADT is 1,168 and 1,706 for 2025 and 2045, respectively, for Phase 1. The highest traveled segment of Faith Home Road falls well below the example of a POAQC of 125,000 AADT in overall traffic volumes and has a diesel truck percentage that is less than half of 8% of the overall AADT.
(ii) Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;	The anticipated number of diesel vehicles is not significant (see above).
(iii) New bus and rail terminals and transfer points than have a significant number of diesel vehicles congregating at a single location;	Bus and rail terminals and transfer points are not part of this project.
(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and	Expanded bus and rail terminals and transfer points are not part of this project.
(v) Projects in or affecting locations, areas, or categories of sites which are identified in the PM10 or PM2.5 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.	The project is not in, nor would it affect, a location of violation or possible violation

Concurrence of air quality conformity was provided by StanCOG’s interagency consultation partners, which include the U.S. EPA and FHWA. A technical memorandum summarizing the Air Quality Study Report findings was initially circulated on 11 and 17

October 2019. EPA requested additional information regarding the breakdown of heavy trucks. The technical information regarding the breakdown of heavy trucks was submitted to the interagency consultation partners on 19 November 2019. StanCOG circulated a second memo to the Interagency Consultation (IAC) Partners on 28 April 2020 requesting concurrence from both the EPA and the FHWA that the "Faith Home Road-Hatch Road to Garner Road 4-Lane Expressway Project," CTIPS ID 214-0000-0695 is not a POAQC. Concurrence was received from the EPA on 30 April 2020 and the FHWA on 11 May 2020, concluding that the proposed Project is not a POAQC.

Carbon Monoxide Hot-Spot Analysis:

The Transportation Project-Level Carbon Monoxide Protocol was used to determine the analysis needed regarding potential project-level CO impacts. The guidelines in the Protocol comply with the Clean Air Act, federal and state conformity rules, NEPA, and CEQA. Table 2.3-18 provides response to various conformity-requirement screening questions in sections 3 and 4 of the Protocol and concludes that the proposed Project would not cause a CO hotspot in the project area.

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Table 2.3-18. 'Transportation Project-Level Carbon Monoxide Protocol' conformity-requirement screening questions

CO Protocol Section Number	CO Protocol Question	Response
3.1.1	Is the project exempt from all emissions analyses? (See Table 1 of Protocol.)	**NO.** The proposed Project is not exempt from all emissions analyses.
3.1.2	Is the project exempt from regional emissions analysis? (See Table 2 of Protocol.)	**NO.** The proposed Project is a roadway construction project, which is not exempt from regional emissions analysis per CFR 93.127.
3.1.3	Is the project locally defined as regionally significant?	**YES**. The proposed Project would construct a new four-lane expressway. The Project was listed as a capacity enhancing project in the StanCOG Air Quality Conformity Analysis for the 2018 RTP. As such, the Project is locally defined as regionally significant in accordance with 40 CFR 93.101.
3.1.4	Is the project in a federal attainment area?	**YES.** The Project is located within an attainment/maintenance area for the federal CO standard.
3.1.5	Are there a currently RTP and TIP?	**YES.** The current RTP and FTIP have been found to conform by StanCOG, and a conformity determination from FHWA was completed on 16 April 2021.
3.1.6	Is the project included in the regional emissions analysis supporting the currently conforming RTP and TIP?	**YES.** The Project is included in the StanCOG 2018 RTP, 2021 FTIP (Project ID: S103; Description: Faith Home Rd from Hatch Rd to Garner Rd; Construct new 2-lane Expressway).
3.1.7	Has the project design/concept and/or scope changed significantly from that in the regional analysis?	**NO.** The proposed Build Alternatives are consistent with the project description in the 2018 RTP/2021 FTIP. Step 3.1.9 is Examine Local Impacts
3.1.9	Examine local impacts. (Proceed to Section 4.)	Proceed to Section 4. Section 4 of the Protocol assesses local analysis. Assessment of the Project's

		effect on localized ambient air quality is based on analysis of CO and PM10 emissions, with the focus on CO. Localized emissions of CO and PM10 may increase with implementation of the proposed Project. CO is used as an indicator of a project's direct and indirect impact
4.1.1	Is the project in a CO nonattainment area?	**NO**. The Project site is located in a federal attainment/ maintenance area.
4.1.2	Was the area redesignated as "attainment" after the 1990 Clean Air Act?	**YES**. EPA approved the maintenance plans and redesignation request in 1998.
4.1.3	Has "continued attainment" been verified with the local Air District, if appropriate?	**YES**. The Project area continues to be in attainment for CO. (Proceed to Level 7)
4.7.1	Does the project worsen air quality?	**YES**. The proposed Project would construct a new roadway. Therefore, the proposed Project would potentially worsen air quality. See responses to questions Level 7a-c below.
4.7.1.a	Does the project significantly increase the percentage of vehicles operating in cold start mode? Increasing the number of vehicles operating in cold start mode by as little as 2 percent should be considered potentially significant.	**NO.** The Project does not significantly increase the percentage of vehicles operating in cold start. It is anticipated that all vehicles in the project intersections are in a fully warmed-up mode.
4.7.1.b	Does the project significantly increase traffic volumes? Increases in traffic volumes in excess of 5 percent should be considered potentially significant. Increasing the traffic volume by less than 5 percent may still be potentially significant if there is a corresponding reduction in average speeds.	**Yes.** As indicated in Tables 2.3-19 and 2.3-20, the proposed Project would significantly increase traffic volumes along the new roadway.

4.7.1.c	Does the project worsen traffic flow? For uninterrupted roadway segments, higher average speeds (up to 50 mph) should be regarded as an improvement in traffic flow. For intersection segments, higher average speeds and a decrease in average delay should be considered an improvement in traffic flow.	**NO**. As shown in Tables 2.3-21 and 2.3-22, the Project would improve the level of service (LOS) at the majority of intersections in the project area.
4.7.2	Is the project suspected of resulting in higher CO concentrations than those existing within the region at the time of attainment demonstration?	NO. The 2004 Revision to the California State Implementation Plan for Carbon Monoxide (ARB, July 22, 2004) shows that the 8-hour CO concentration in Modesto was 3.7 parts per million (ppm) in 2003, 61 percent below the federal standard. Between 2010 and 2012, the maximum 8-hour CO concentration measured in Modesto was 2.7 ppm, 71 percent below the federal standard. Therefore, it is unlikely that the proposed Project would result in a new exceedance of the CO standards. However, to demonstrate that the proposed Project would not result in any new exceedances the CO concentrations at the most congested intersections in the Project area were modeled. Tables 2.3-23 and 2.3-24 list the 1-hour and 8-hour CO concentrations under the build-out years 2025 and 2045 conditions. As shown, none of the intersections would result in any concentrations exceeding the 1-hour or 8-hour CO standards. Therefore, the proposed Project would not cause a CO hotspot in the project area.

Table 2.3-19. 2025 Traffic Data (ADT/Truck ADT) for Project Phases

Roadway Segment	Existing	No Build	Phase 1 (two-lane expressway)	Phase 1 Project Related Change in Traffic over No Build	Phase 2 (Four-lane Expressway)	Phase 2 (Full Build Out) Project Related Change in Traffic over No build
Mitchell Road south of SR 132	22,300/1,947	22,800/1,991	24,790/2,164	1,990/173	24,850/2,170	2,050/179
Garner Road south of SR 132	7,050/787	10,880/1,214	23,630/2,637	12,750/1,423	26,290/2,934	15,410/1,720
SR 132 west of Santa Fe Avenue	18,710/1,887	20,560/2,074	18,950/1,912	-1,610/-162	18,420/1,858	-2,140/-216
Santa Fe Avenue south of SR 132	9,460/946	11,820/1,182	7,760/776	-4,060/-406	6,690/669	-5,130/-513
Mitchell Road north of Finch Road	30,550/4,240	31,920/4,430	30,630/4,251	-1,290/-179	30,300/4,205	-1,620/-225
Garner Road north of Finch Road	9,170/1,177	11,840/1,519	26,730/3,430	14,890/1,911	29,830/3,827	17,990/2,308
Mitchell Road south of Finch Road	45,370/8,907	50,240/9,864	34,620/6,797	-15,620/-3,067	32,790/6,438	-17,450/-3,426
Mitchell Road south of Hatch Road	32,720/4,366	36,160/4,825	28,940/3,862	-7,220/-963	28,080/3,747	-8,080/-1,078
Hatch Road west of Faith Home Road	12,290/1,281	12,750/1,329	18,710/1,950	5,960/621	19,900/2,074	7,150/745
Faith Home Road south of Hatch Road	3,510/456	3,310/430	18,510/2,406	15,200/1,976	20,420/2,655	17,110/2,225
Santa Fe Avenue south of Hatch Road	7,560/983	9,490/1,234	7,920/1,030	-1,570/-204	7,620/991	-1,870/-243
Mitchell Road north of Service Road	28,960/4,070	32,170/4,522	30,210/4,246	-1,960/-276	29,870/4,198	-2,300/-324
Faith Home Road north of Service Road	3,870/503	3,650/475	11,930/1,551	8,280/1,076	12,990/1,689	9,340/1,214
Faith Home Road north of Keyes Road	3,670/477	4,700/611	8,660/1,126	3,960/515	9,070/1,179	4,370/568
Keyes Road west of SR 99	9,580/2,321	11,210/2,716	13,240/3,208	2,030/492	13,450/3,259	2,240/543
Faith Home Road north of Hatch Road	--	--	29,900/3,337	29,900/3,337	35,380/3,948	35,380/611

Note: Assumed 11.2 percent Average truck percentage

Table 2.3-20. 2045 Traffic Data (ADT/Truck ADT) for Project Phases

Roadway Segment	Existing	No Build	Phase 1 (two-lane expressway)	Phase 1 Project Related Change in Traffic over No Build	Phase 2 (Four-lane Expressway)	Phase 2 (Four-lane Expressway)
Mitchell Road south of SR 132	22,300/1,947	24,040/2,099	26,020/2,272	1,980/173	26,030/2,273	1,990/174
Garner Road south of SR 132	7,050/787	20,450/2,282	43,660/4,872	23,210/2,590	52,640/5,874	32,190/3,592
SR 132 west of Santa Fe Avenue	18,710/1,887	25,180/2,540	22,430/2,263	-2,750/-277	21,120/2,130	-4,060/-410
Santa Fe Avenue south of SR 132	9,460/946	17,700/1,770	11,900/1,190	-5,800/-580	8,930/893	-8,770/-877
Mitchell Road north of Finch Road	30,550/4,240	35,340/4,905	34,550/4,795	-790/-110	33,280/4,619	-2,060/-286
Garner Road north of Finch Road	9,170/1,177	18,520/2,376	46,100/5,915	27,580/3,539	55,970/7,181	37,450/4,805
Mitchell Road south of Finch Road	45,370/8,907	62,420/12,255	42,670/8,377	-19,750/-3,878	38,190/7,498	-24,230/-4,757
Mitchell Road south of Hatch Road	32,720/4,366	44,770/5,974	33,590/4,483	-11,180/-1,491	31,730/4,234	-13,040/-1,740
Hatch Road west of Faith Home Road	12,290/1,281	13,890/1,448	28,380/2,958	14,490/1,510	31,850/3,319	11,7960/1,871
Faith Home Road south of Hatch Road	3,510/456	2,780/361	26,260/3,414	23,480/3,053	31,660/4,116	28,880/702
Santa Fe Avenue south of Hatch Road	7,560/983	14,310/1,860	11,730/1,525	-2,580/-335	10,740/1,396	-3,570/-464
Mitchell Road north of Service Road	28,960/4,070	40,210/5,652	35,990/5,058	-4,220/-594	35,170/4,943	-5,040/-709
Faith Home Road north of Service Road	3,870/503	3,100/403	15,690/2,040	12,590/1,637	18,920/2,460	15,820/2,057
Faith Home Road north of Keyes Road	3,670/477	7,270/945	13,420/1,745	6,150/800	14,570/1,894	7,300/949
Keyes Road west of SR 99	9,580/2,321	15,270/3,700	17,580/4,260	23,10/560	17,970/4,355	2,700/655
Faith Home Road north of Hatch Road	--	--	43,670/4,873	43,670/4,873	58,480/6,526	58,480/6,526

Note: Assumed 11.2 percent Average truck percentage

Table 2.3-21. Intersection Analysis – Year 2025 Conditions

Intersection		Peak Hour	Existing		No Build		Phase 1		Phase 2	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Claus Road and Scenic Drive	AM	18	B	43	D	451	D	18	B
		PM	19	B	25	C	30	C	19	B
2	Michell Road / El Vista Avenue and SR 132	AM	62	E	62	E	55	E	62	E
		PM	68	E	64	E	60[1]	E	68	E
3	Garner Road and Claus Road SR 132	AM	29	C	29	C	40	D	29	C
		PM	32	C	33	C	35	D	32	C
4	Santa Fe Avenue and SR 132	AM	16	B	13	B	10	B	16	B
		PM	19	B	15	B	13	B	19	B
5	Mitchell Road and Finch Road	AM	23	C	31	C	24	C	23	C
		PM	16	B	19	B	19	B	16	B
6	Garner Road and Finch Road	AM	20	C	27	D	31	C	20	C
		PM	16	C	22	C	27	C	16	C
7	Mitchell Road and Hatch Road	AM	53	D	68	E	48	D	53	D
		PM	59	E	63	E	51	D	59	E
8	Faith Home Road and Hatch Road	AM	29	D	10	A	28	C	29	D
		PM	17	C	9	A	30	C	17	C
9	Santa Fe Avenue and Hatch Road	AM	31	D	26	C	21	C	31	D
		PM	35	E	25	C	20	B	35	E
10	Faith Home Road and Whitmore Avenue	AM	11	B	14	B	46[1]	D	11	B
		PM	12	B	15	B	39[1]	D	12	B
11	Mitchell Road and Service Road	AM	43	D	32	C	35	D	43	D
		PM	51	D	32	C	36	D	51	D
12	Faith Home Road and Service Road	AM	10	A	11	B	27[1]	C	10	A
		PM	10	A	11	B	28[1]	C	10	A
13	Faith Home Road and Keyes Road	AM	16	C	27	C	34[1]	C	16	C
		PM	40	E	29	C	24[1]	C	40	E
14	SR 99 SB Ramps and Keyes Road	AM	21	C	14	B	14	B	21	C
		PM	102	F	27	C	21	C	102	F
15	SR 99 NB Ramps and Keyes Road	AM	63	F	21	C	25	C	63	F
		PM	28	D	14	B	21	C	28	D

[1]Traffic information for Construction Year (2025) mitigated value

Table 2.3-22. Intersection Analysis – Year 2045 Conditions

Intersection		Peak Hour	Existing		No Build		Phase 1		Phase 2	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Claus Road and Scenic Drive	AM	18	B	70	E	622	E	18	B
		PM	19	B	69	E	69[1]	E	19	B
2	Michell Road / El Vista Avenue and SR 132	AM	62	E	96	F	57[1]	E	62	E
		PM	68	E	124	F	95[1]	F	68	E
3	Garner Road and Claus Road SR 132	AM	29	C	88	F	54[1]	D	29	C
		PM	32	C	44	D	45[1]	D	32	C
4	Santa Fe Avenue and SR 132	AM	16	B	26	C	21	C	16	B
		PM	19	B	25	C	22	C	19	B
5	Mitchell Road and Finch Road	AM	23	C	52	D	52	D	23	C
		PM	16	B	35	D	20	C	16	B
6	Garner Road and Finch Road	AM	20	C	80	F	29	C	20	C
		PM	16	C	75	F	26	C	16	C
7	Mitchell Road and Hatch Road	AM	53	D	49	D	51	D	53	D
		PM	59	E	51	D	49	D	59	E
8	Faith Home Road and Hatch Road	AM	29	D	10	A	41	D	29	D
		PM	17	C	11	B	35	D	17	C
9	Santa Fe Avenue and Hatch Road	AM	31	D	74	E	38	D	31	D
		PM	35	E	41	D	28	C	35	E
10	Faith Home Road and Whitmore Avenue	AM	11	B	20	C	30[1]	C	11	B
		PM	12	B	17	B	33[1]	C	12	B
11	Mitchell Road and Service Road	AM	43	D	40	D	44	D	43	D
		PM	51	D	40	D	42	D	51	D
12	Faith Home Road and Service Road	AM	10	A	16	C	33[1]	C	10	A
		PM	10	A	15	B	27[1]	C	10	A
13	Faith Home Road and Keyes Road	AM	16	C	98	F	60[1]	E	16	C
		PM	40	E	63	E	39[1]	D	40	E
14	SR 99 SB Ramps and Keyes Road	AM	21	C	21	C	20[1]	B	21	C
		PM	102	F	56	E	32[1]	C	102	F
15	SR 99 NB Ramps and Keyes Road	AM	63	F	38	D	19[1]	B	63	F
		PM	28	D	23	C	22[1]	C	28	D

[1]Traffic information for Construction Year (2045) mitigated value

Table 2.3-23. 2025 Phase 1 (2 Lanes) CO Concentrations

Intersection	Receiver	Distance to Centerline (m)	Project- Related Increase (1hr/8hr)	Without/With Project (1 hr.) (ppm)	Without/With Project (8hr) (ppm)	Exceeds	
						1hr (20 ppm)	8hr (9 ppm)
Michell Road / El Vista Avenue and SR 132	2A	9	0.0/0.1	2.7/2.7	1.9/2.0	No	No
	2B	14	0.0/0.0	2.8/2.8	2.1/2.1	No	No
Mitchell Road and Finch Road	5A	11	-0.1/-0.1	2.5/2.4	1.8/1.7	No	No
	5B	18	0.0/0.0	2.3/2.3	1.6/1.6	No	No
Mitchell Road and Hatch Road	7A	12	0.0/0.0	2.7/2.7	2.0/2.0	No	No
	7B	30	0.0/0.0	2.4/2.4	1.7/1.7	No	No
ppm = Parts per million							

Table 2.3-24. 2045 Phase 1 (2 Lanes) CO Concentrations

Intersection	Receiver	Distance to Centerline (m)	Project- Related Increase (1hr/8hr)	Without/With Project (1 hr.) (ppm)	Without/With Project (8hr) (ppm)	Exceeds	
						1hr (20 ppm)	8hr (9 ppm)
Michell Road / El Vista Avenue and SR 132	2A	9	0.0/0.0	2.3/2.3	1.6/1.6	No	No
	2B	14	0.0/0.0	2.4/2.4	1.7/1.7	No	No
Mitchell Road and Finch Road	5A	11	-0.1/0.0	2.3/2.2	1.5/1.5	No	No
	5B	18	0.0/-0.1	2.2/2.2	1.5/1.4	No	No
Mitchell Road and Hatch Road	7A	12	0.0/0.0	2.4/2.4	1.7/1.7	No	No
	7B	30	0.0/0.0	2.2/2.2	1.5/1.5	No	No
ppm = Parts per million							

Mobile Source Air Toxics (MSAT): The NEPA requires, to the fullest extent possible, that the policies, regulations, and laws of the Federal Government be interpreted and administered in accordance with its environmental protection goals. The NEPA also requires Federal agencies to use an interdisciplinary approach in planning and decision-making for any action that adversely impacts the environment. The NEPA requires and FHWA is committed to the examination and avoidance of potential impacts to the natural and human environment when considering approval of proposed transportation projects. In addition to evaluating the potential environmental effects, we must also consider the need for safe and efficient transportation in reaching a decision that is in the best overall public interest. The FHWA policies and procedures for implementing NEPA are contained in regulation at 23 CFR Part 771.

The FHWA developed a tiered approach with three categories for analyzing MSAT in NEPA documents, depending on specific project circumstances:

- **Category 1** includes projects that:

    - qualify as a categorical exclusion under 23 CFR 771.117(c);
    - are exempt under the Clean Air Act conformity rule under 40 CFR 93.126; or
    - have no meaningful impacts on traffic volumes or vehicle mix

    The proposed Faith Home Road and Garner Road Expressway does not meet the Category 1 requirements.

- **Category 2:** The types of projects included in this category are those that serve to improve operations of highway, transit, or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions. This category covers a broad range of projects.

    FHWA anticipates that most highway projects that need an MSAT assessment will fall into this category. Any projects not meeting the criteria in category (1) or category (3) below should be included in this category. Examples of these types of projects are minor widening projects; new interchanges, replacing a signalized intersection on a surface street; or projects where design year traffic is projected to be less than 140,000 to 150,000 annual average daily traffic (AADT).

    For these projects, a qualitative assessment of emissions projections should be conducted. This qualitative assessment would compare, in narrative form, the expected effect of the project on traffic volumes, vehicle mix, or routing of traffic and the associated changes in MSAT for the project alternatives, including no-build, based on VMT, vehicle mix, and speed. It would also discuss national trend data projecting substantial overall reductions in emissions due to stricter engine and fuel regulations issued by the EPA. Because the emission effects of these projects typically are low, we expect there would be no appreciable difference in

overall MSAT emissions among the various alternatives. The proposed project falls within Category 2.

- **Category 3:** This category includes projects that have the potential for meaningful differences in MSAT emissions among project alternatives. We expect a limited number of projects to meet this two-pronged test. To fall into this category, a project should:

    - Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location, involving a significant number of diesel vehicles for new projects or accommodating with a significant increase in the number of diesel vehicles for expansion projects; or

    - Create new capacity or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000 or greater by the design year;

    - And also proposed to be located in proximity to populated areas.

  Projects falling within Category 3 should be more rigorously assessed for impacts. The Project is not a Category 3 project.

MSAT Qualitative Analysis: The proposed Project falls within Category 2, a project with low potential MSAT effects. The amount of MSAT emitted for each alternative would be proportional to the VMT, assuming that other variables such as fleet mix are the same for each alternative (Table 2.3-25).

The VMT estimated for Build Alternative, Phase 1 is slightly lower (approximately -0.3 percent) than that for the No-Build Alternative, because the new facility assists in redistributing the project traffic in the project area and does not generate new trips in the area. For Build Alternative, Phase 2 (Full Build Out) VMT remains lower than the No Build VMT, as well. This decreased VMT means MSAT, under both Build Alternatives Phase 1 and Phase 2 (Full Build Out), would probably be lower than the No-Build Alternative in the study area. There could also be localized differences in MSAT from indirect effects of the project such as associated access traffic. Travel to other destinations would be reduced with corresponding reductions in emissions at those locations.

Table 2.3-25. Projected VMT for Project Alternatives

Existing VMT	2025			2045			Percentage of Change
	No Build	Phase I	Change Over No Build	No Build	Phase 1	Change Over No Build	
3,954,149	4,382,313	4,377,502	-4,811	5,452,722	5,435,886	-16,835	-0.3%

Because the estimated VMT under both Build Alternative, Phase 1 and Phase 2 are nearly the same, varying by less than -0.1 percent, it is expected there would be no appreciable difference in overall MSAT emissions. Emissions are virtually certain to be lower than present levels in the design year as a result of the EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent from 2010 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future than they are today.

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis: In FHWA's view, information is incomplete or unavailable to credibly predict the project- specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the IRIS, which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, http://www.epa.gov/iris/). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on MSAT Analysis in

NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are; cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (2007) (http://pubs.healtheffects.org/view.php?id=282). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (http://www.epa.gov/risk/basicinformation.htm#g) and the HEI (2007) (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld the EPA's approach to addressing risk in its two-step decision framework. Information is incomplete

or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

MSAT Conclusion: What we know about mobile source air toxics is still evolving. As the science progresses FHWA will continue to revise and update the guidance on MSAT analysis in NEPA. FHWA is working with stakeholders, the EPA and others to better understand the strengths and weaknesses of developing analysis tools and the applicability on the project level decision documentation process.

Conclusion: The proposed Project is located in an attainment/maintenance area for CO and PM10 and a nonattainment area for PM2.5 and Ozone. The results of the air quality analysis demonstrate that the proposed Project's short-term and long-term air quality impacts would not:

- Worsen air quality in the project area.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Expose sensitive receptors to substantial pollutant concentrations.

Further, the proposed Project alternatives would not generate any localized CO Hot-Spots in the Project area, which demonstrates that the proposed Project would meet project-level conformity.

Regional transportation conformity requirements are also met for the proposed Project as is included in the StanCOG financially constrained 2021 FTIP. The StanCOG 2018 RTP and 2021 FTIP were found to conform by StanCOG on 17 February 2021. The design concept and scope of the proposed Project is consistent with the project description in the 2018 RTP, 2021 FTIP, and the "open to traffic" assumptions of the StanCOG Air Quality Conformity Analysis. Regional emissions for the proposed Project Build Alternative, Phase 1 and Phase2 are lower than Existing and No-build levels.

The proposed Project is not considered a POAQC for PM10 or PM2.5 as the Project does not have a significant increase in the number of diesel vehicles above the general threshold of 10,000 diesel trucks. The proposed Project incorporates the PM10 control measures as outline in the SJVAPCD's Regulation VIII for construction mitigation, which is consistent with the District's SIP and the District's PM10 Maintenance Plan. Therefore, the Project would

not conflict with or obstruct implementation of any SJVAPCD's air quality management plans. The proposed Project would not result in any long-term objectionable odors.

2.3.6.3.2 No Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly impact air quality.

2.3.6.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of the measure below as part of the Project would minimize short-term construction related air quality emissions.

Measure AQ-1 (Construction Emissions)

- The construction contractor shall comply with the Department's Standard Specifications Section 14-9.03 Dust Control of Caltrans' Standard Specifications (2018).

- The construction contractor shall comply with Section 7-1.02 Emissions Reduction and Section 18 Dust Palliative of the Department's Standard Specifications (2018).

- The various components of the Wind Erosion Control BMP (WE-1) from the Department's Construction Site Best Management Practices Manual will be implemented as applicable.

- The Project would incorporate the use of energy-efficient lighting, such as LED traffic signals.

- The following SJVAPCD Regulation VIII construction measures will be implemented to meet SIP Control Measures as outlined in the SJVAPCD PM10 Maintenance Plan.

    - Apply water to unpaved surfaces and areas.

    - Use non-toxic chemical or organic dust suppressants on unpaved roads and traffic areas Limit or reduce vehicle speed on unpaved roads and traffic areas.

    - Maintain areas in a stabilized condition by restricting vehicle access.

    - Install wind barriers, as applicable.

    - During high winds, cease outdoor activities that disturb the soil.

    - Keep bulk materials sufficiently wet when handling.

    - Store and handle materials in a three-sided structure.

- When storing bulk materials, apply water to the surface or cover the storage pile with a tarp.

- Don't overload haul trucks. Overloaded trucks are likely to spill bulk materials.

- Cover haul trucks with a tarp or other suitable cover. Or, wet the top of the load enough to limit visible dust emissions.

- Clean the interior of cargo compartments on emptied haul trucks prior to leaving a site Prevent track out by installing a track out control device.

- Clean up track out at least once a day. If along a busy road or highway, clean up track out immediately.

- Monitor dust-generating activities and implement appropriate measures for maximum dust control.

2.3.7 Noise

2.3.7.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the NEPA/23 Code of Federal Regulations Part 772 (23 CFR 772) noise analysis; please see Chapter 3 of this document for further information on noise analysis under CEQA.

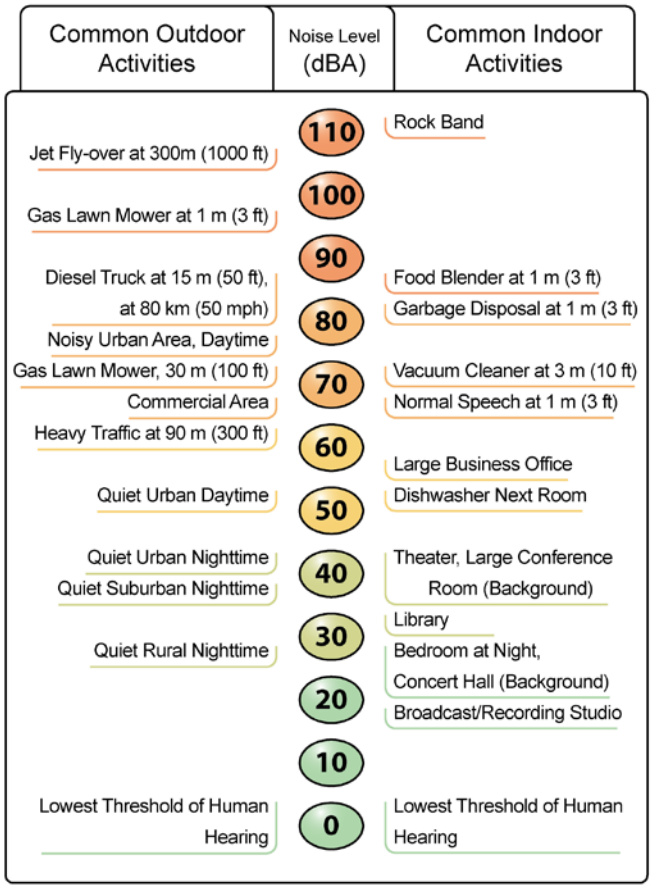
NATIONAL ENVIRONMENTAL POLICY ACT AND 23 CFR 772

For highway transportation projects with Federal Highway Administration (FHWA) involvement (and the Department, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 Code of Federal Regulations [CFR] 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). Table 2.3-26 lists the noise abatement criteria for use in the NEPA/23 CFR 772 analysis. Figure 2.3-7 shows the noise levels of common activities.

Table 2.3-26. Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, Leq(h)	Description of activity category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67 (Exterior)	Residential.
C[1]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.
[1] Includes undeveloped lands permitted for this activity category.		

Figure 2.3-7. Noise Levels of Common Activities



According to the Department's *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the Project would have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the Project.

The Department's 2011 *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5 dBA reduction for all impacted receptors in the future noise levels must be achieved for an abatement to be considered feasible.

Other considerations include topography, access requirements, other noise sources, and safety considerations. Additionally, a noise reduction of at least 7 dBA must be achieved at one or more benefited receptors for an abatement measure to be considered reasonable. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance and the cost per benefited residence.

2.3.7.2 Affected Environment

The Primary information source for this section was the Project's Noise Study Report (NSR, April 2020). Vibration and its potential temporary impacts to listed fish species are discussed in section 2.4 (Biological Environment).

Because the proposed Project would result in a new highway on a new alignment and increase the number of through-traffic lanes, the proposed Project would be considered a Type 1 project by the Federal Highway Administration. All Type 1 projects require noise impact analysis.

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and the obstructions or atmospheric factors affecting the propagation path to the receiver determines the noise level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Under controlled conditions in an acoustical laboratory, trained, healthy human hearing can discern 1 dB changes in sound levels, when exposed to steady, single- frequency ("pure-tone") signals in the mid-frequency (1,000 Hz–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3 dB increase in sound, would generally be perceived as barely detectable.

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 decibels for each doubling of distance from this source. Highways consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 decibels for each doubling of distance from a line source.

In determining traffic noise impacts primary consideration is given to exterior areas where frequent human use occurs that would benefit from a lowered noise level. For this Project,

exterior areas where frequent human use occurs that would benefit from a lowered noise level are limited primarily to outdoor activity areas of individual residences, such as back yards or patios.

Traffic noise levels were predicted using the FHWA Traffic Noise Model Version 2.5 (TNM 2.5). TNM 2.5 is a computer model based on two FHWA reports: FHWA-PD-96- 009 and FHWA-PD-96-010. Key inputs to the TNM 2.5 were the locations of roadways, shielding features (e.g., topography and buildings), existing and proposed privacy walls, ground type, and receivers.

Traffic noise impacts are considered to occur at receiver locations where predicted design- year noise levels are at least 12-dBA greater than existing noise levels, or where predicted design year noise levels approach or exceed the NAC for the applicable activity category. Where traffic noise impacts are identified, noise abatement must be considered for reasonableness and feasibility as required by 23 CFR 772 and the Protocol.

A review of aerial photography and a detailed field investigation were conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed Project. Specifically, land uses in the project area were categorized by land use Activity Category as defined in Table 2.3-28 and outdoor activity areas were noted. These sensitive receivers fall into FHWA and the Department's NAC Activity Category B and E, 67 dBA Leq (h) and 72 dBA Leq (h) respectively.

Three (3) short-term measurements were conducted using a Larson Davis Model 824 Type 1 sound level meter. Measurements were taken over a 20-minute period at each site. Short- term monitoring was conducted at Activity Category B land uses. One long-term measurement was conducted over a 24-hour period. The purpose of this measurement was to describe variations in sound levels throughout the day, rather than absolute sound levels at a specific receiver of concern. This measurement was utilized to determine when the traffic peak hour occurs. Long-term noise monitoring was conducted at one location.

One (1) long-term location and three short-term locations were identified within the proposed project area. A total of 12 receiver locations were evaluated in the model. All measurement locations are shown in Figure 2.3-8. All sensitive receiver clusters are shown in Figure 2.3-9 and Figure 2.3-10. The NAC Activity Category is 'B' for all receiver locations except R8 which is Activity Category E. Land uses on Faith Home Road north and south of Hatch Road consist of single-family residences, commercial land uses and farmland. There are no sensitive receivers in the project area north of the Tuolumne River.

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Figure 2.3-8. Long and Short Term Measurement Locations

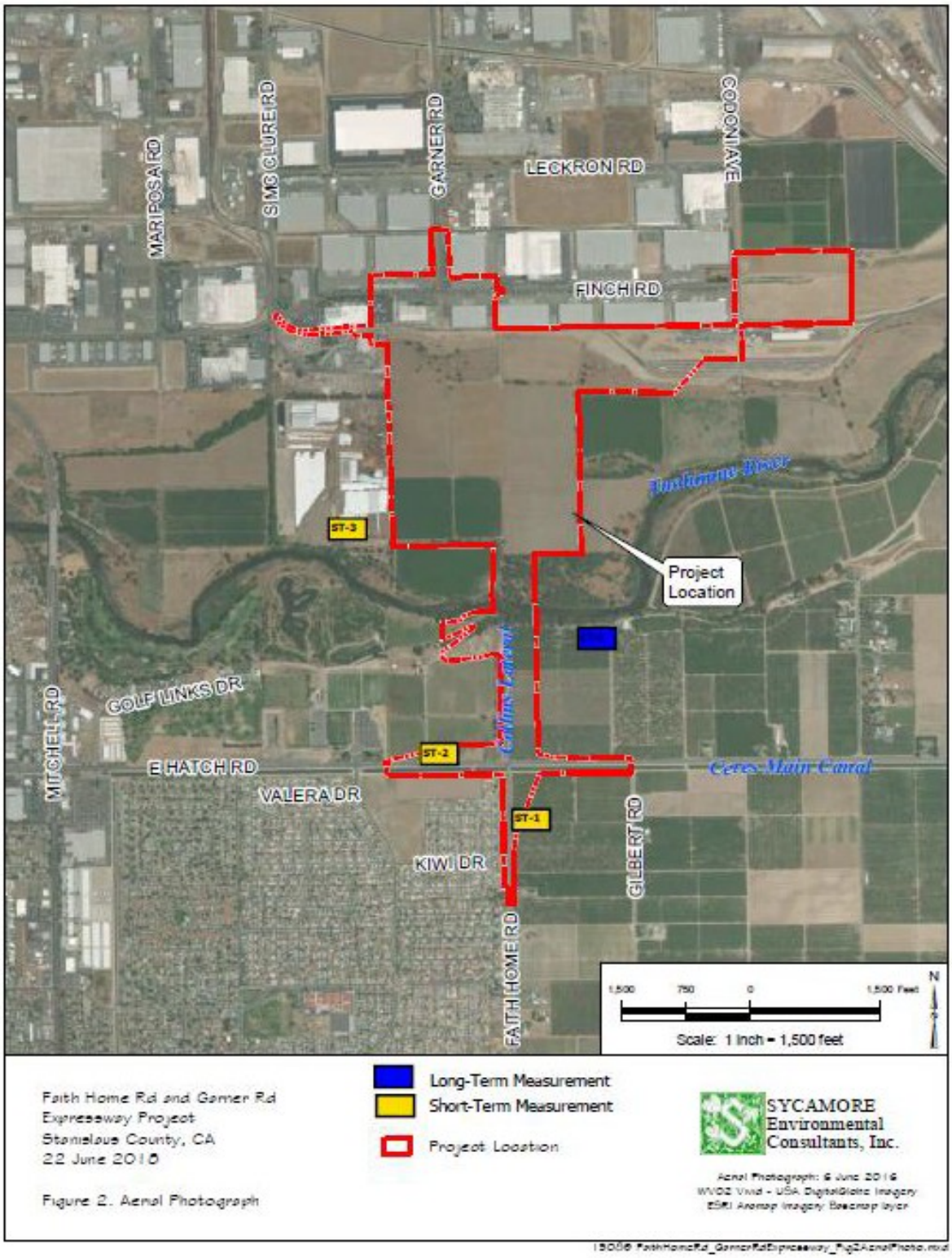

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Figure 2.3-9. Modeled Receiver Locations (North of Hatch Road)

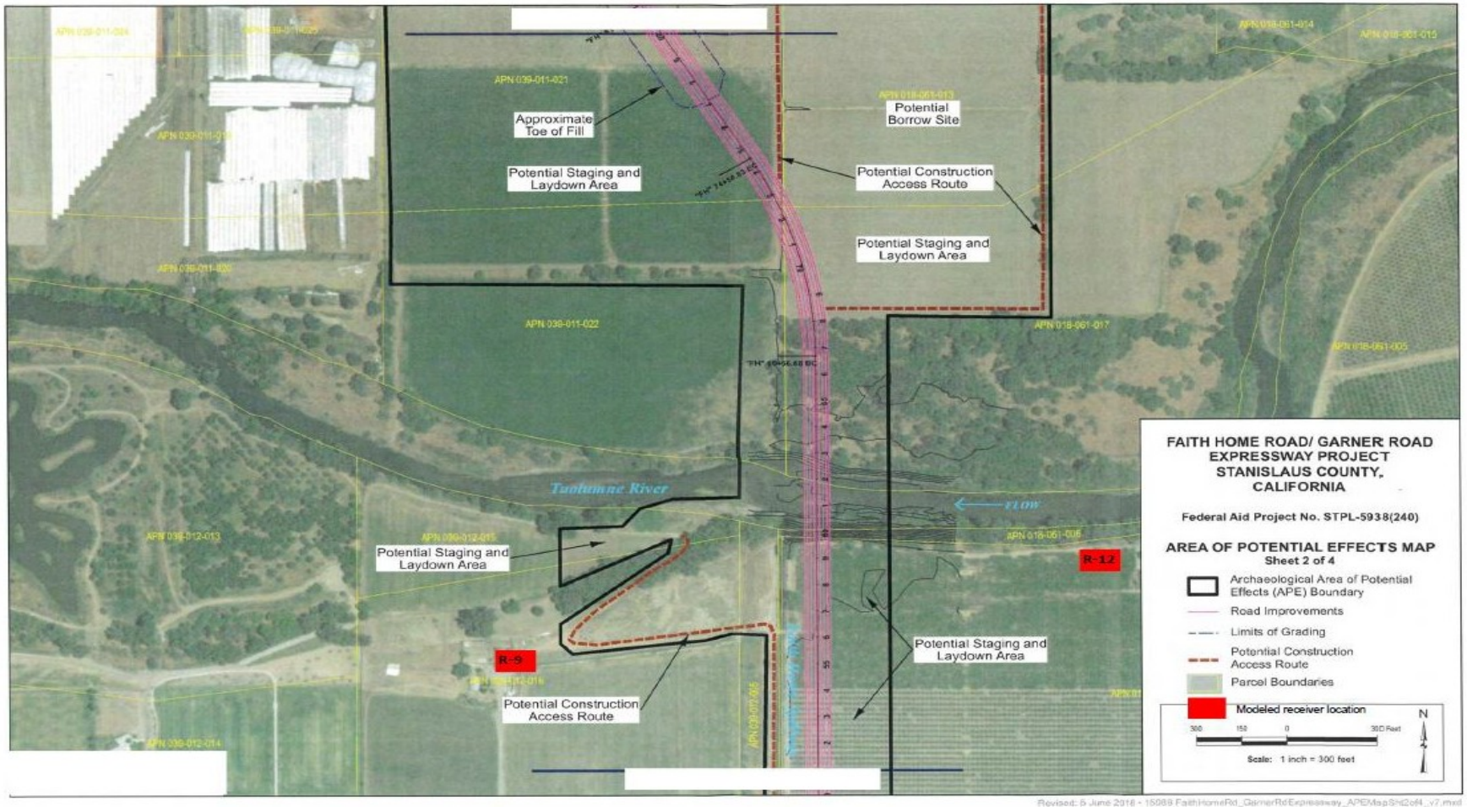

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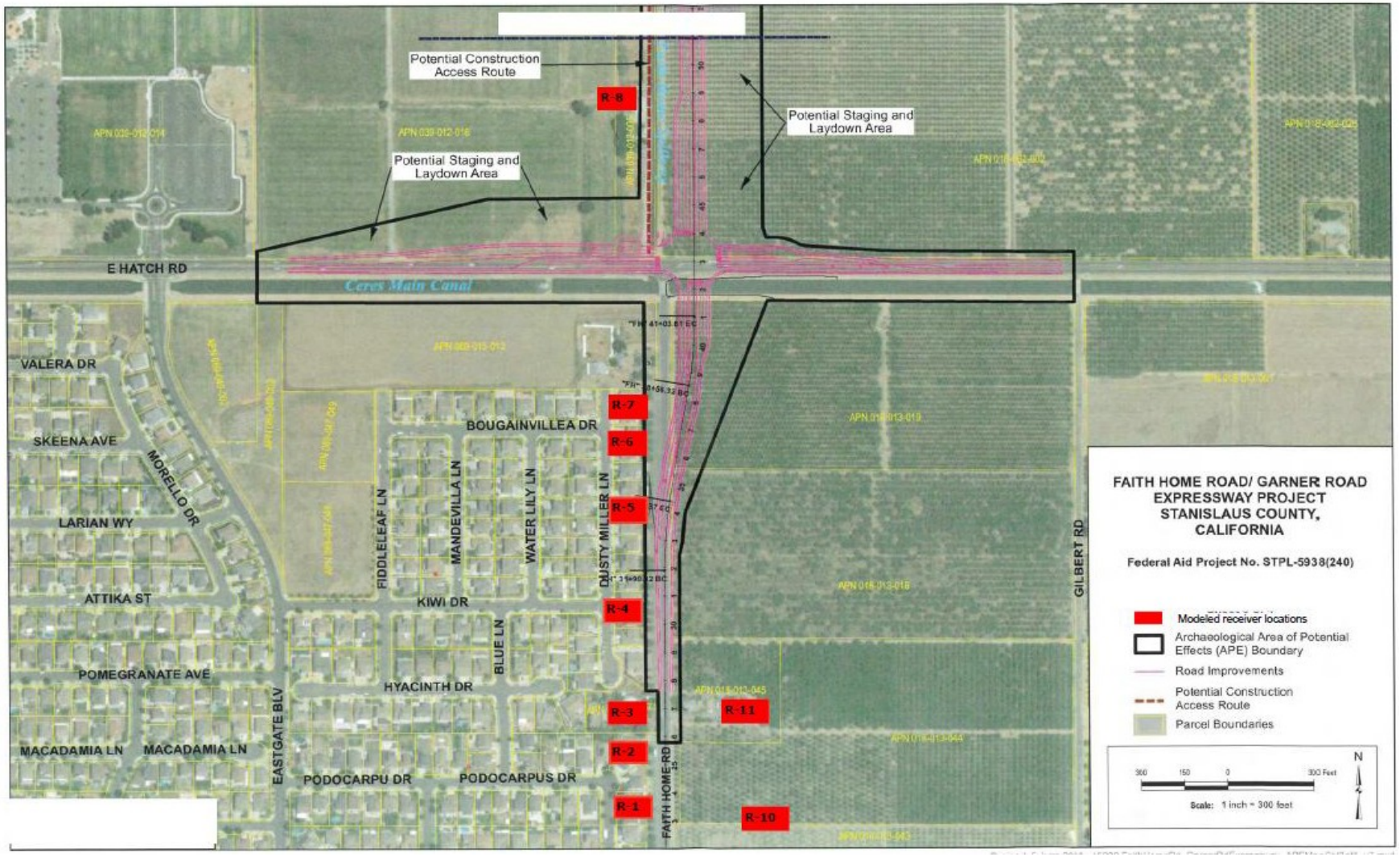
Figure 2.3-10. Modeled Receiver Locations (South of Hatch Road)



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2.3.7.3 Environmental Consequences

2.3.7.3.1 Build Alternative

Operations

Existing Nosie Levels: Existing noise levels were estimated utilizing existing peak hour traffic data. Existing peak hour traffic was entered into the TNM 2.5 with existing roadway coordinates to estimate existing peak hour traffic noise levels. The results of the existing traffic noise modeling are shown in Table 2.3-27. Existing noise levels during the noisiest hour range from 48 to 58 dBA Leq. As shown in Table 2.3-27, all receiver locations are below their respective FHWA NAC activity standard.

Table 2.3-27 Summary of Modeled Existing Peak Hour Noise Levels

Receiver ID	Location	Type of Land Use[a]	Number of Dwelling Units	Noise Abatement Category	Modeled Existing Peak Noise Level, dBA Leq
R1	1812 Somersby Lane	SFR	13	B (67)	54
R2	3953 Podocarpus Drive	SFR	2	B (67)	53
R3	1747 Faith Home Road	SFR	1	B (67)	52
R4	1624 Dusty Miller Lane	SFR	6	B (67)	54
R5	1608 Dusty Miller Lane	SFR	5	B (67)	53
R6	1524 Dusty Miller Lane	SFR	2	B (67)	54
R7	1516 Dusty Miller Lane	SFR	2	B (67)	58
R8	3967 Hatch Road	Office	1	E (72)	49
R9	3629 Hatch Road	SFR	1	B (67)	41
R10	1906 Faith Home Road	SFR	1	B (67)	48
R11	1760 Faith Home Road	SFR	1	B (67)	54
R12	4247 Hatch Road	SFR	1	B (67)	45[b]

[a] =SFR – single-family residence;
[b] =Traffic noise was not dominant noise source so minimum daytime noise level was used as a worst-case scenario.

Future Noise Levels: Traffic noise impacts occur when either of the following occurs: (1) if the traffic noise level at a sensitive receptor location is predicted to “approach or exceed” the NAC, or (2) if the predicted traffic noise level is 12-dBA or more over the corresponding modeled existing peak noise level at the sensitive receptor locations analyzed. When traffic noise impacts occur, noise abatement measures must be considered.

Table 2.3-31 summarizes the traffic noise modeling results for the design-year conditions with and without the proposed Project. Predicted design-year traffic noise levels with the proposed Project are compared to Existing conditions and to design-year 2045 No- Build conditions. The modeled future noise levels with the Project were compared to the modeled existing peak noise levels from TNM 2.5 to determine whether a substantial noise increase would occur. The

modeled future noise levels for the Build Alternatives were also compared to the respective NAC land use Activity Category to determine whether a traffic noise impact would occur. The results in Table 2.3-28 indicate that predicted traffic noise levels for the design- year with-project conditions would not approach or exceed the respective NAC land use Activity Category within the project area; therefore, noise abatement measures were not evaluated.

Under the 2045 No-Build Alternative no improvements would be constructed. The traffic noise modeling results for the design-year 2045 No-Build Alternative range from 49 to 59 dBA Leq, as shown in Table 2.3-29. Noise levels for design-year 2045 No- Build conditions are expected to increase up to 1 dB over existing noise levels. This increase is due to an increase in traffic volumes from Existing to future 2045 No-Build conditions. Noise levels at evaluated receivers under 2045 No-Build conditions do not approach or exceed their respective NAC Activity Category standard.

The 2045 design-year traffic noise modeling results for the Phase 1 and 2 range from 47 to 64 dBA Leq as shown in Tables 2.3-28 and 2.3-29. Noise levels for the design-year under either Build Alternative would increase from 2 to 14 dBA over existing noise levels. An increase of greater than 12 dB is predicted at receiver R8 for both the two-lane and four-lane alternatives. However, this receiver is not a residential use (it has been converted to office space) and does not include any areas of significant outdoor activity. For both Phase 1 and Phase 2, noise levels at all sensitive receivers remain below their respective NAC Activity Category standard. The proposed Project would not cause a noise impact to the surrounding area; therefore, a noise abatement evaluation was not required.

Table 2.3-28. Predicted Future Noise Analysis Phase 1 (2 Lanes)

Receiver ID	Number of Dwelling Units	Land Use	Address	Noise Levels - Leq(h), dBA						Activity Category (NAC)	Impact Type[2]
				Existing Noise Level Leq(h), dBA[1]	Design Year Noise Level without Project	Design Year Noise Level with Project	Design Year Noise Level without Project minus Existing Conditions	Design Year Noise Level with Project minus Existing Conditions	Design Year Noise Level with Project minus No Project Conditions		
R1	13	SFR	1812 Somersby Lane	54	54	60	0	6	5	B (67)	**None**
R2	2	SFR	3953 Podocarpus Drive	53	54	59	1	6	5	B (67)	**None**
R3	1	SFR	1747 Faith Home Road	52	52	58	0	6	5	B (67)	**None**
R4	6	SFR	1624 Dusty Miller Lane	54	55	61	1	7	6	B (67)	**None**
R5	5	SFR	1608 Dusty Miller Lane	53	54	60	1	7	6	B (67)	**None**
R6	2	SFR	1524 Dusty Miller Lane	54	55	59	1	5	4	B (67)	**None**
R7	2	SFR	1516 Dusty Miller Lane	58	59	62	1	4	3	B (67)	**None**
R8	1	Office	3967 Hatch Road	49	50	61	1	12	11	E (72)	**None**
R9	1	SFR	3629 Hatch Road	41	42	47	1	6	6	B (67)	**None**
R10	1	SFR	1906 Faith Home Road	48	49	54	1	6	5	B (67)	**None**
R11	1	SFR	1760 Faith Home Road	54	55	60	1	6	5	B (67)	**None**
R12	1	SFR	4247 Hatch Road[3]	45	45	47	0	2	2	B (67)	**None**

[1] Short Term measurements were used for calibrating the TNM models and do not represent a frequently used outdoor area within the proposed project area.

[2] Impact types: A/E - Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria (NAC).

[3] Traffic Noise was not dominant noise source so minimum daytime noise level was used for existing and no-build conditions.

Table 2.3-29. Predicted Future Noise Analysis Phase 2 (4 Lanes)

Receiver ID	Number of Dwelling Units	Land Use	Address	Noise Levels - Leq(h), dBA						Activity Category (NAC)	Impact Type[2]
				Existing Noise Level Leq(h), dBA[1]	Design Year Noise Level without Project	Design Year Noise Level with Project	Design Year Noise Level without Project minus Existing Conditions	Design Year Noise Level with Project minus Existing Conditions	Design Year Noise Level with Project minus No Project Conditions		
R1	13	SFR	1812 Somersby Lane	54	54	60	0	6	6	B (67)	**None**
R2	2	SFR	3953 Podocarpus Drive	53	54	59	1	6	6	B (67)	**None**
R3	1	SFR	1747 Faith Home Road	52	52	58	0	6	6	B (67)	**None**
R4	6	SFR	1624 Dusty Miller Lane	54	55	61	1	7	6	B (67)	**None**
R5	5	SFR	1608 Dusty Miller Lane	53	54	61	1	8	7	B (67)	**None**
R6	2	SFR	1524 Dusty Miller Lane	54	55	60	1	6	5	B (67)	**None**
R7	2	SFR	1516 Dusty Miller Lane	58	59	64	1	6	5	B (67)	**None**
R8	1	Office	3967 Hatch Road	49	50	62	1	13	13	E (72)	**None**
R9	1	SFR	3629 Hatch Road	41	42	49	1	8	7	B (67)	**None**
R10	1	SFR	1906 Faith Home Road	48	49	54	1	6	6	B (67)	**None**
R11	1	SFR	1760 Faith Home Road	54	55	61	1	7	6	B (67)	**None**
R12	1	SFR	4247 Hatch Road[3]	45	45	49	0	4	4	B (67)	**None**

[1] Short Term measurements were used for calibrating the TNM models and do not represent a frequently used outdoor area within the proposed project area.

[2] Impact types: A/E - Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria (NAC).

[3] Traffic Noise was not dominant noise source so minimum daytime noise level was used for existing and no-build conditions.

Construction

During construction of the Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Table 2.3-30 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. To minimize the construction-generated noise the Project must implement the Department's Standard Specification 14-8.02, "Noise Control".

Table 2.3-30. Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

2.3.7.3.2 No-Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly result in noise impacts.

2.3.7.4 Avoidance, Minimization, and/or Mitigation Measures

Measure NOISE-1 (Construction Nosie): To minimize construction-generated noise the Project will implement the Department's Standard Specification 14-8.02, "Noise Control".

2.4 Biological Environment

2.4.1 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value. Important habitat for birds is also discussed below.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in the Threatened and Endangered Species section. Wetlands and other waters are also discussed below. Stanislaus County does not have an adopted Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP).

2.4.1.1 Affected Environment

Primary information sources for this section include the Project's Natural Environment Study (NES, March 2020). Special-status natural communities evaluated in the Project NES included waters, wetlands, riparian communities, and any natural community ranked S1, S2, or S3 by CDFW. Biological communities in the Project area shown on Figure 2.4-1 and Table 2.4-1 provides habitat acreages and the approximate anticipated impact acreages. The Tuolumne River, the riparian forest, and seasonal wetland are special-status natural communities in the Project area and are described below.

Riparian Forest: Approximately 7.39 acres of riparian forest occur along the banks of the Tuolumne River and in a field to the north of the river. Much of the riparian forest occurs on the north side of the river, along the bank and in a field to the north that has not been converted to agriculture like the surrounding fields. This field is part of the natural floodplain of the river. Riparian forest also occurs on the south bank in a corridor along the Tuolumne River. This community is classified as a Valley oak woodland alliance, which is considered highly imperiled by CDFW.

Tuolumne River: Tuolumne River is a perennial river that flows west through the Project area. Approximately 3.17 acre of Tuolumne River occurs in the Project area. The Project area includes an approximately 875-foot long section of the river, and it has an average width of 158 feet. The Tuolumne River is a traditionally navigable waterway from its mouth to Highway 132 at Basso Bridge Crossing (24 miles east of the Project area).

The Tuolumne River within the Ordinary Low Water Mark (OLWM), where it occurs in the Project area, is a State-owned sovereign land administered by the California State Lands Commission. The Tuolumne River in the Project area is regulated by the Central Valley Flood Protection Board.

Seasonal Wetland: A seasonal wetland occurs on the eastern edge of the Project area, in the riparian forest community north of the Tuolumne River. Approximately 0.12 acre of the seasonal wetland occurs within the Project area. The seasonal wetland is a natural community of special concern because it is a potential waters of the U.S.

Habitat Connectivity: The Tuolumne River and its associated riparian corridor provide habitat connectivity between areas in the Project area. The Project area is located in a rural setting and the scope and footprint of the project are small compared to the surrounding available habitat. Mule deer habitat of the Western United States was reviewed for mule deer migration corridors. Mule deer range includes the North Coast, Sacramento Valley, Cascade Ranges, Modoc Plateau, San Francisco Bay Area, Sierra Nevada, Transverse Range and most of the Central Coast and Peninsular Ranges. Mule deer typically do not occur in much of the San Joaquin Valley, Mojave Desert, South Coast, and sections of the Sonoran Desert.

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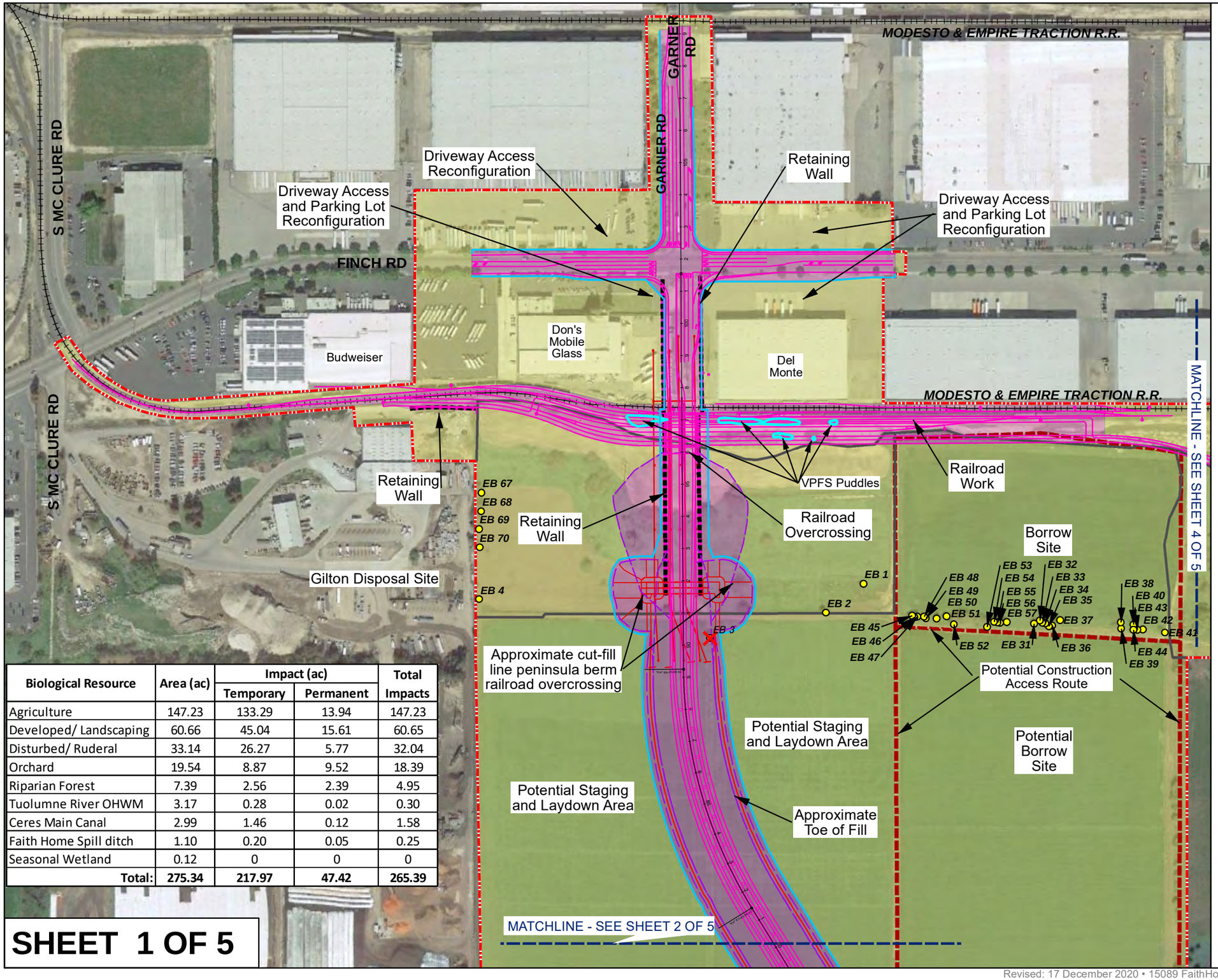
Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
December 2020

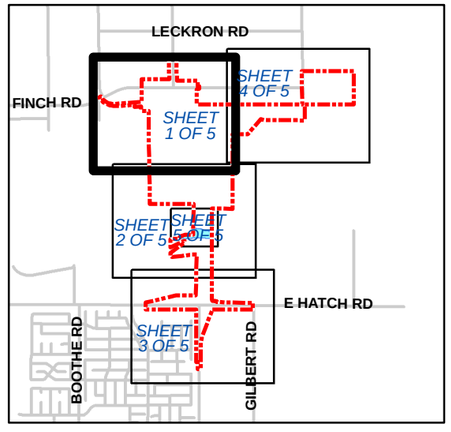
Figure 2.4-1.
Project Impact Map
Sheet 1 of 5



Biological Resource	Area (ac)	Impact (ac)		Total Impacts
		Temporary	Permanent	
Agriculture	147.23	133.29	13.94	147.23
Developed/ Landscaping	60.66	45.04	15.61	60.65
Disturbed/ Ruderal	33.14	26.27	5.77	32.04
Orchard	19.54	8.87	9.52	18.39
Riparian Forest	7.39	2.56	2.39	4.95
Tuolumne River OHWM	3.17	0.28	0.02	0.30
Ceres Main Canal	2.99	1.46	0.12	1.58
Faith Home Spill ditch	1.10	0.20	0.05	0.25
Seasonal Wetland	0.12	0	0	0
Total:	**275.34**	**217.97**	**47.42**	**265.39**

SHEET 1 OF 5

- Biological Study Area (BSA)
- Biological Community Boundary
- Road and Railroad Improvements
- Retaining Wall
- Limits of Grading
- Proposed Drainage Improvements
- Potential Construction Access Route
- Permanent Impact
- Temporary Impact
- Elderberry Shrub location and number
- Elderberry Shrub to be Removed
- Impacts to riparian vegetation with elderberry shrubs (1.14 ac)
- Proposed Right of Way acquisition



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Scale: 1 inch = 300 feet

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by TY Lin International (Recv'd: 15 June 2018)
Topo and Stationing: ACAD-098 Align & Prof.dwg
by TY Lin International (Recv'd: 15 June 2018)
Aerial Photograph: 14 March 2016
Google Earth Imagery
Parcels: Stanislaus County GIS Parcel layer
(Downloaded: 31 May 2018)

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MATCHLINE - SEE SHEET 1 OF 5

Approximate Toe of Fill

Potential Borrow Site

Potential Staging and Laydown Area

Potential Construction Access Route

Potential Staging and Laydown Area

EB 63 EB 64 EB 65 EB 66 EB 61 EB 6 EB 7 EB 5 EB 62 EB 60 EB 59 EB 58

See SHEET 5 of 5, River Crossing Inset For more detail.

EB 9 EB 10 EB 11 EB 8

Temporary Work Trestles (2)

Proposed RSP

EB 17 EB 25 EB 24 EB 22 EB 14 EB 21 EB 15 EB 19 EB 23 EB 20 EB 12 EB 16 EB 13 EB 18

Tuolumne River

Potential Staging and Laydown Area

Faith Home Spill ditch

EB 26 EB 27

Potential Construction Access Route

MATCHLINE - SEE SHEET 3 OF 5

EB 28 EB 29

SHEET 2 OF 5

Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
December 2020

Figure 2.4-1.
Project Impact Map
Sheet 2 of 5

- Biological Study Area (BSA)
- Biological Community Boundary
- Tuolumne River OHWM
- Faith Home Spill ditch
- Seasonal Wetland
- Road and Railroad Improvements
- Retaining Wall
- Limits of Grading
- Proposed Drainage Improvements
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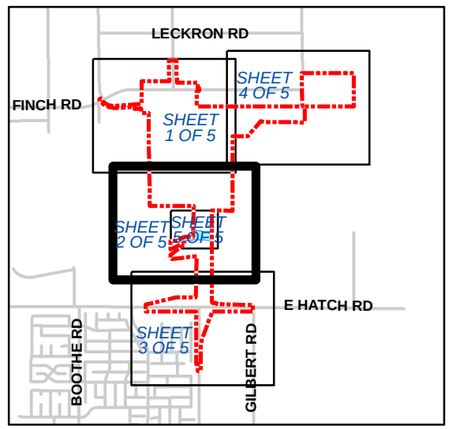

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MATCHLINE - SEE SHEET 2 OF 5

EB 28

EB 29

EB 30

Potential Construction Access Route

Potential Staging and Laydown Area

Potential Staging and Laydown Area

Faith Home Spill ditch

Ceres Main Canal

E HATCH RD

FAITH HOME RD

GILBERT RD

LARIAN WY

ATTIKA ST

POMEGRANATE AVE

EASTGATE BLV

SHEET 3 OF 5

Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
December 2020

Figure 2.4-1.
Project Impact Map
Sheet 3 of 5

- Biological Study Area (BSA)
- Biological Community Boundary
- Faith Home Spill ditch
- Ceres Main Canal
- Road and Railroad Improvements
- Retaining Wall
- Limits of Grading
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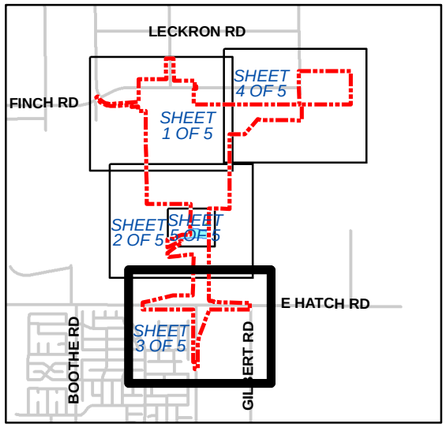

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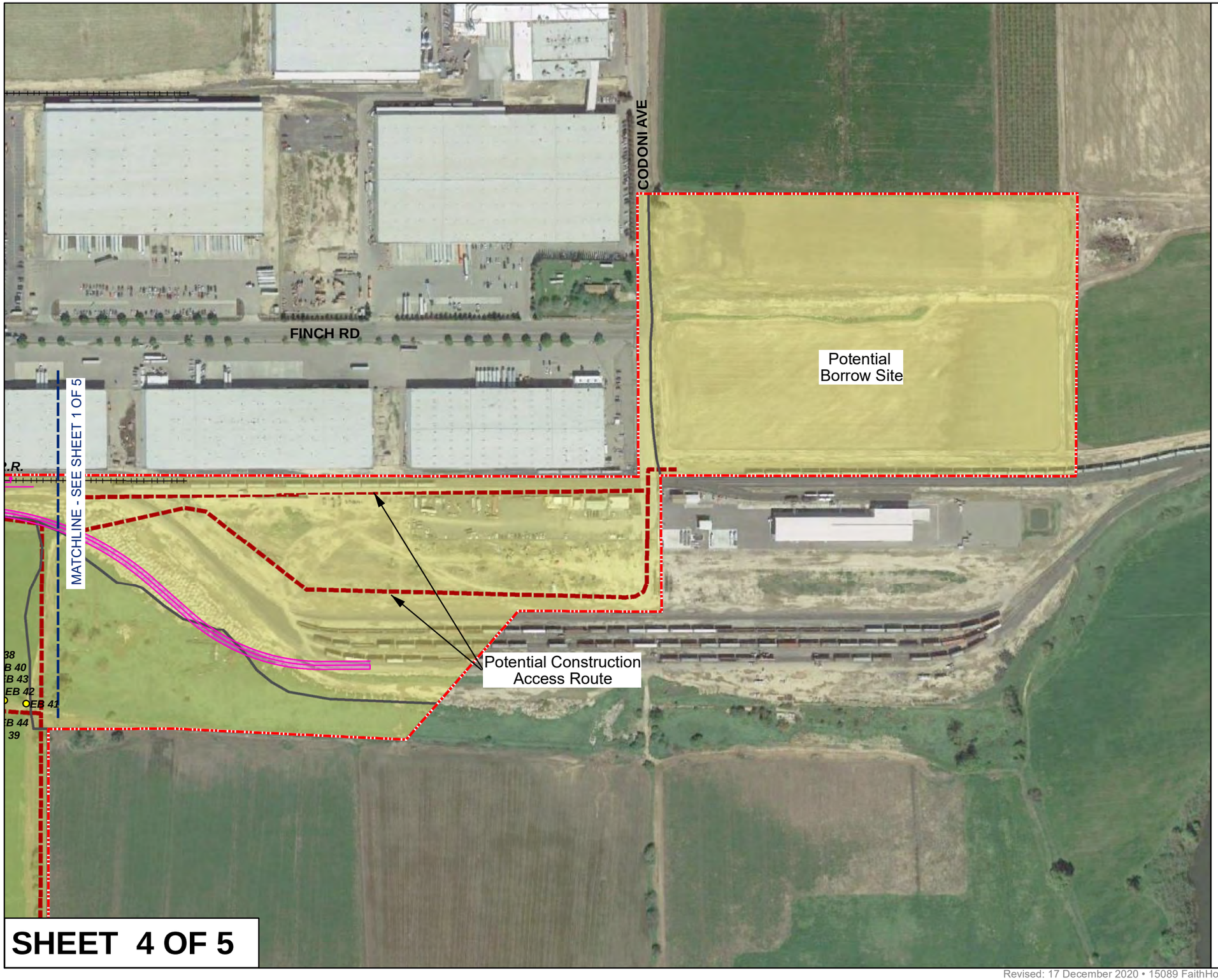
Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
December 2020

Figure 2.4-1.
Project Impact Map
Sheet 4 of 5



- Biological Study Area (BSA)
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- Retaining Wall
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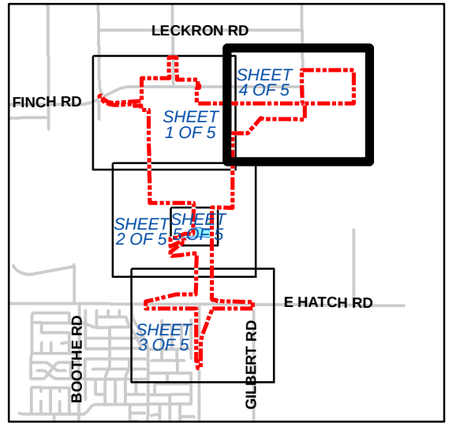
- Proposed Right of Way acquisition



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SHEET 4 OF 5

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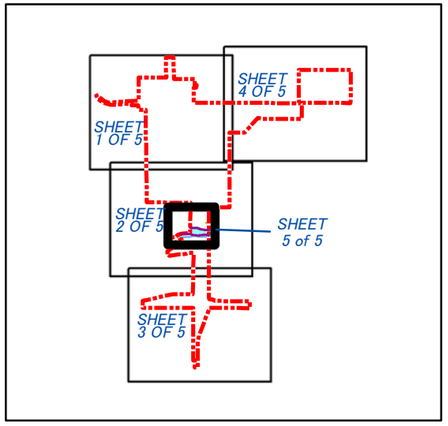
Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
December 2020

Figure 2.4-1.
Project Impact Map
Sheet 5 of 5
River Crossing Inset

- Biological Study Area (BSA)
- Biological Community Boundary
- Road and Railroad Improvements
- Proposed Drainage Improvements
- Potential Construction Access Route
- Concrete Flume
- Proposed RSP
- Permanent Impact
- Temporary Impact
- Elderberry Shrub location and number
- Elderberry Shrub to be Removed
- Impacts to riparian vegetation with elderberry shrubs (1.14 ac)
- Tuolumne River OHWM
- Tuolumne River OLWM
- Seasonal Wetland



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Scale: 1 inch = 100 feet
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Parcels: Stanislaus County GIS Parcel layer
(Downloaded: 31 May 2018)

EB 9
"FH" 56+66.68 BC
EB 10
EB 11
Tuolumne River OHWM
Tuolumne River OLWM
Seasonal Wetland
Proposed RSP
EB 8
Shaded Riverine Aquatic with Shallow Water Habitat
Tuolumne River
Flow
Temporary Work Trestles (2)
Bridge Columns
Shaded Riverine Aquatic with Shallow Water Habitat
EB 15
EB 14
EB 13
EB 12
EB 25
EB 16
EB 17
EB 18
EB 24
EB 23
EB 22
EB 21
EB 19
EB 20
Concrete Flume
Flow
Faith Home Spill-ditch

SHEET 5 OF 5 River Crossing Inset

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Table 2.4-1. Project Impacts to Biological Communities

Biological Community	Acreage	Temporary Impact (acre)	Permanent Impact (acre)	Total Impacts (acre)
Agriculture	147.23	133.29	13.94	147.23
Developed/ Landscaped	60.66	45.04	15.61	60.65
Disturbed/ Ruderal	33.14	26.27	5.77	32.04
Orchard	19.54	8.87	9.52	18.39
Riparian Forest	7.39	2.56	2.39	4.95
Tuolumne River OHWM	3.17	0.28	0.02	0.30
Ceres Main Canal	2.99	1.46	0.12	1.58
Faith Home Spill ditch	1.10	0.20	0.05	0.25
Seasonal Wetland	0.12	0	0	0
Total:	**275.34**	**217.97**	**47.42**	**265.39**

Important Bird Areas (IBAs): IBAs identify sites that provide essential habitat for birds. The National Audubon Society IBAs were reviewed to determine if the Project is located in a Global IBA, Continental IBA, or State IBA. The Project is not located in an IBA.

2.4.1.2 Environmental Consequences

2.4.1.2.1 Build Alternative

Riparian Forest: The proposed Project may result in up to 2.39 acres of permanent impacts and 2.56 acres of temporary impacts to the riparian forest. The Project would remove approximately 69 trees, 64 of which are located in riparian forest. Table 2.4-2 summarizes native trees in the Project area and the number to be removed. Figure 2.4-2 is a tree impact map. The final tree removal determination would be made by Stanislaus County.

Table 2.4-2. Estimated Native Tree Impacts in the Project area

Tree Species		Total No. of Trees in Project Area	No. of Trees in Riparian Forest	No. of Trees to be Removed in Riparian Forest	Total No. of Trees to be Removed
Common Name	**Scientific Name**				
Fremont cottonwood	*Populus fremontii*	36	32	21	21
Box elder	*Acer negundo*	28	28	14	14
Valley oak	*Quercus lobata*	71	51	17	22
Interior live oak	*Quercus wislizeni*	2	2	2	2

Tree Species		Total No. of Trees in Project Area	No. of Trees in Riparian Forest	No. of Trees to be Removed in Riparian Forest	Total No. of Trees to be Removed
Common Name	**Scientific Name**				
Northern California black walnut	*Juglans hindsii*	6	6	2	2
Goodding's black willow	*Salix gooddingii*	9	9	6	6
Arroyo willow	*Salix lasiolepis*	1	1	1	1
Alder	*Alnus* sp.	1	1	1	1
	Total:	154	130	64	69

Tuolumne River: The Project may result in up to 0.28 acre of temporary impacts and 0.02 acre of permanent impacts to the Tuolumne River, a jurisdictional water of the U.S. and State. The temporary impacts would result from installation of pile bents that support the temporary work trestle and falsework. The piles would be likely be driven into place with a vibratory impact driver. Permanent impacts would result from installation of the bridge columns and RSP below the OHWM of the river.

Seasonal Wetland: The proposed Project design avoids impacts to the seasonal wetland in the Project area. The avoidance and minimization measure below would ensure that the seasonal wetland would not be impacted.

Habitat Connectivity: The proposed viaduct and bridge would be elevated above the floodplain, and are not substantial barriers to wildlife movement. The bridge over the river would not create any permanent barriers to fish movement. The Project is not located within the range of mule deer habitat or migration corridors.

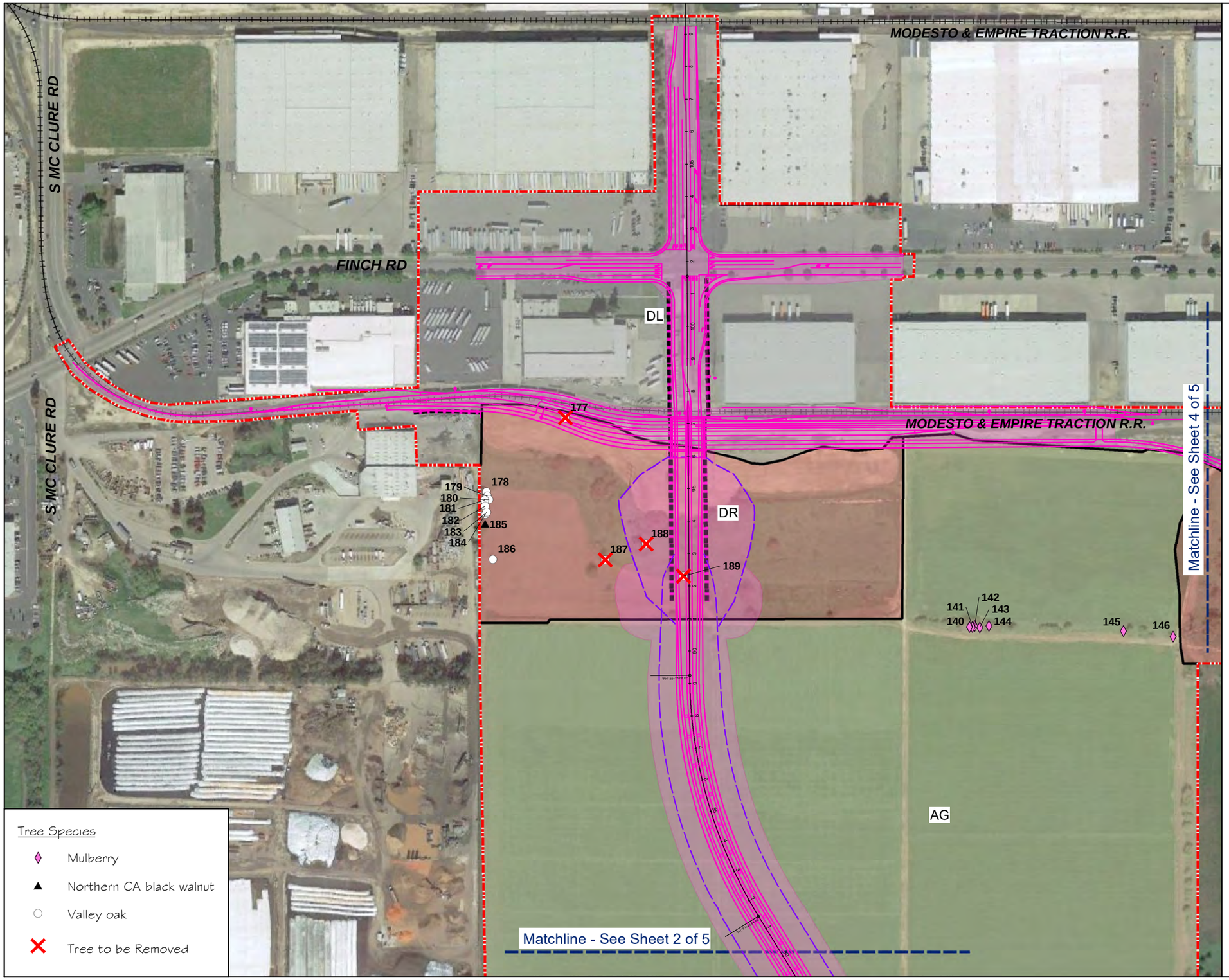
Important Bird Areas (IBA): The Project is not located in an IBA.

2.4.1.2.2 No-Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly impact natural communities.

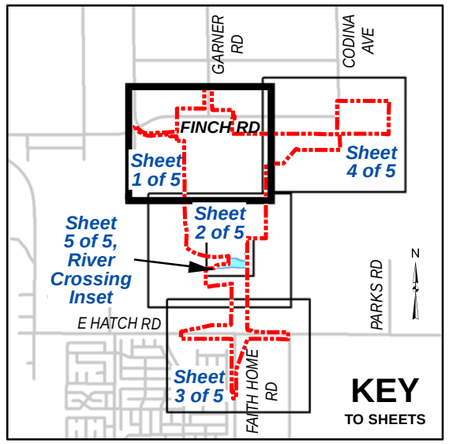
Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
December 2020

Figure 2.4-2.
Tree Impact Map
Sheet 1 of 5



Biological Study Area (BSA)
Retaining Wall
Project Footprint
Biological Community Boundary
Agriculture (AG)
Developed / Landscaping (DL)
Disturbed / Ruderal (DR)

Tree Species
- Mulberry
- Northern CA black walnut
- Valley oak
- Tree to be Removed



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Scale: 1 inch = 300 feet

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Topographic Basemap: J16-1722 Topo(2014).dwg
by TY Lin International (Recv'd: 16 Jan. 2018)
Aerial Photograph: 14 March 2016
Google Earth Aerial Imagery

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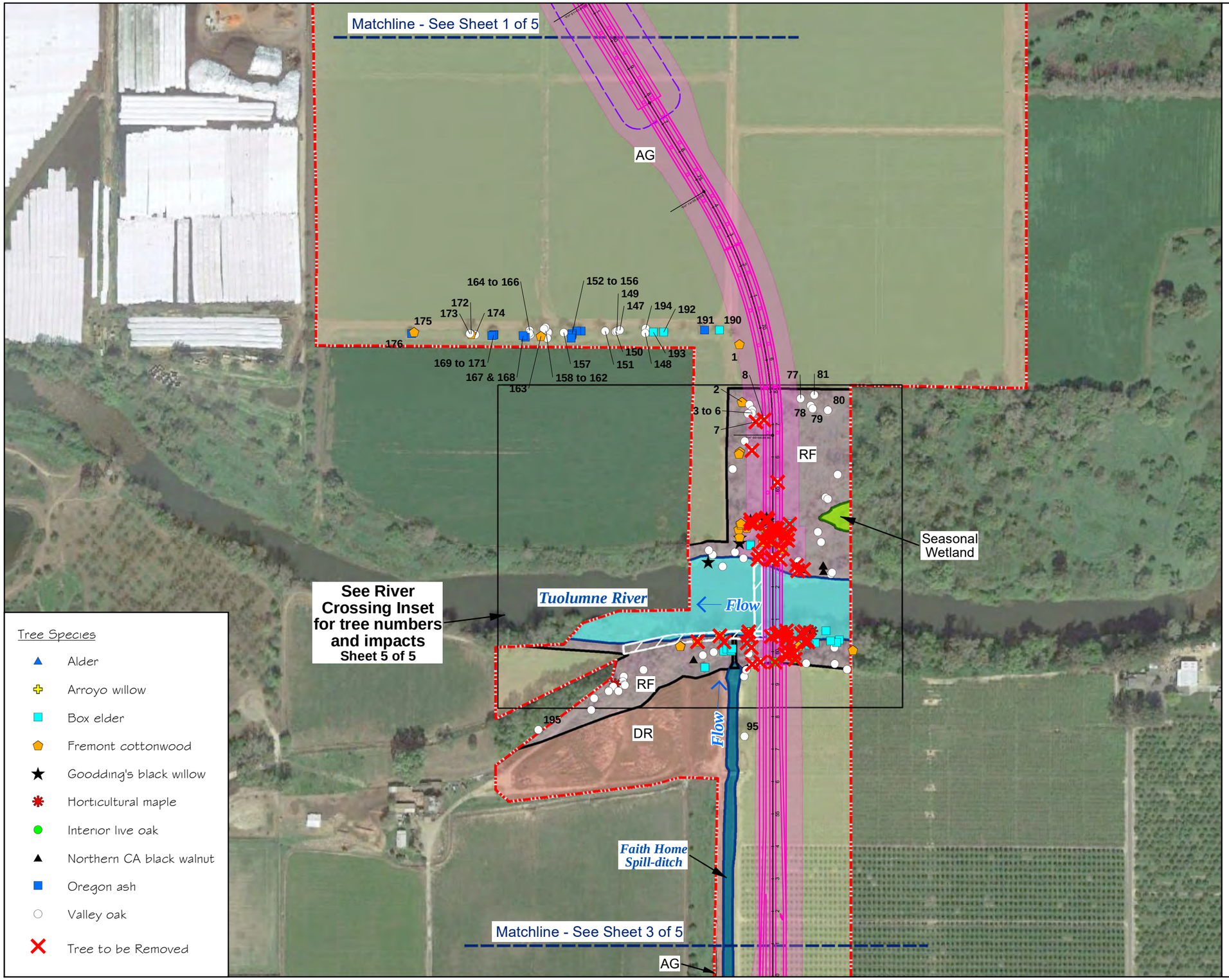
Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
December 2020

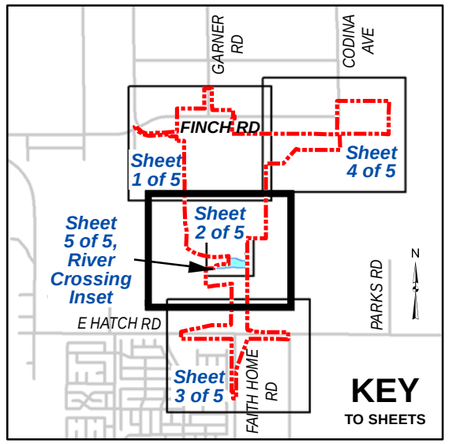
Figure 2.4-2.
Tree Impact Map
Sheet 2 of 5



Tree Species

- Alder
- Arroyo willow
- Box elder
- Fremont cottonwood
- Goodding's black willow
- Horticultural maple
- Interior live oak
- Northern CA black walnut
- Oregon ash
- Valley oak
- Tree to be Removed

- Biological Study Area (BSA)
- Project Footprint
- Biological Community Boundary
- Tuolumne River Ordinary High Water Mark (OHWM)
- Faith Home Spill-ditch
- Seasonal Wetland
- Agriculture (AG)
- Disturbed / Ruderal (DR)
- Orchard (OR)
- Riparian Forest (RF)



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Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
December 2020

Figure 2.4-2.
Tree Impact Map
Sheet 3 of 5

Matchline - See Sheet 2 of 5

AG
OR
Faith Home Spill ditch
Flow
139
AG
82
E HATCH RD
Flow
DR
Ceres Main Canal
DR
DL
DR
DR
OR
BOUGAINVILLEA DR
DL
MORELLO DR
FIDDLELEAF LN
MANDEVILLA LN
WATER LILY LN
DUSTY MILLER LN
GILBERT RD
ATTIKA ST
KIWI DR
BLUE LN
HYACINTH DR
GATE BLV
DL
OR
OCARPU DR
PODOCARPUS DR

Tree Species
- Valley oak
- Tree to be Removed

- Biological Study Area (BSA)
- Project Footprint
- Biological Community Boundary
- Faith Home Spill-ditch
- Ceres Main Canal
- Agriculture (AG)
- Developed / Landscaping (DL)
- Disturbed / Ruderal (DR)
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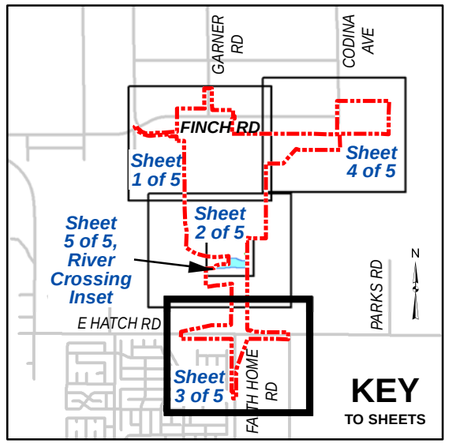

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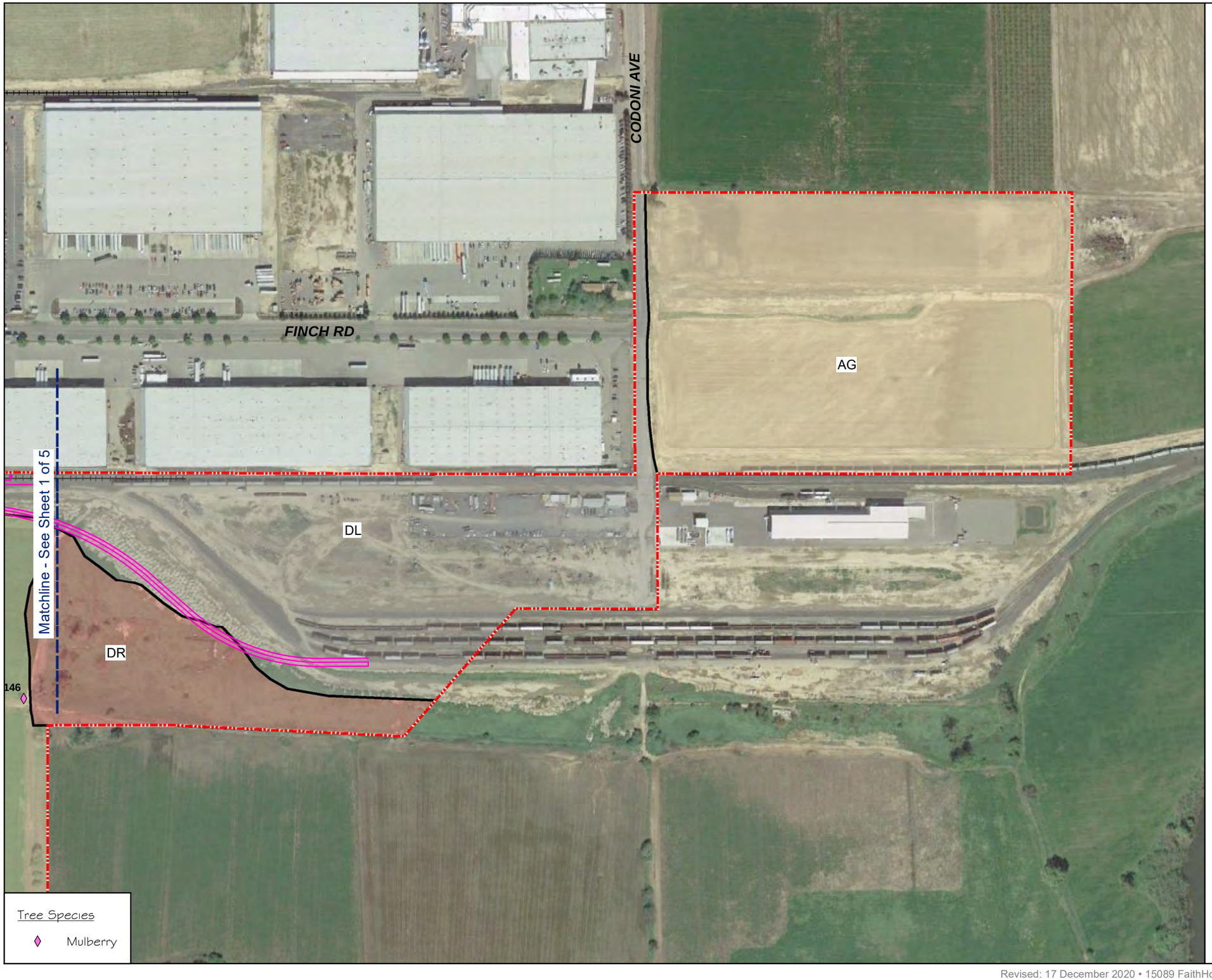
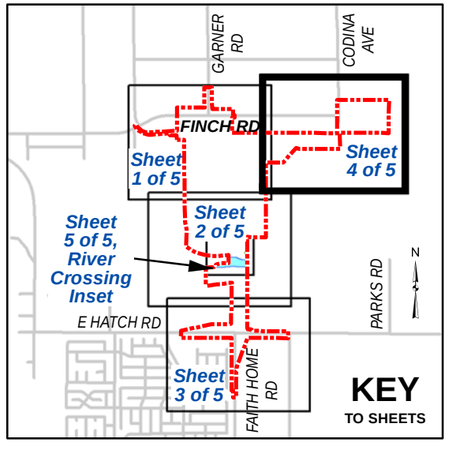
Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
December 2020

Figure 2.4-2.
Tree Impact Map
Sheet 4 of 5





- Biological Study Area (BSA)
- Project Footprint
- Biological Community Boundary
- Agriculture (AG)
- Developed / Landscaping (DL)
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Tree Species

- Alder
- Arroyo willow
- Box elder
- Fremont cottonwood
- Goodding's black willow
- Horticultural maple
- Interior live oak
- Northern CA black walnut
- Valley oak
- Tree to be Removed

AG

RF

Seasonal Wetland

Proposed RSP

Tuolumne River

Flow

Temporary Work Trestles (2)

Faith Home Spill-ditch

Flow

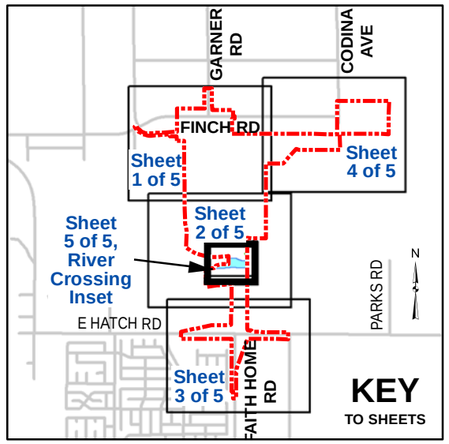
OR

DR

Faith Home Rd and Garner Rd
Expressway Project
Stanislaus County, CA
December 2020

Figure 2.4-2.
Tree Impact Map
Sheet 5 of 5
River Crossing Inset

- Biological Study Area (BSA)
- Project Footprint
- Road Improvements
- Biological Community Boundary
- Tuolumne River Ordinary High Water Mark (OHWM)
- Faith Home Spill-ditch
- Seasonal Wetland
- Agriculture (AG)
- Orchard (OR)
- Riparian Forest (RF)
- Disturbed / Ruderal (DR)



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2.4.1.3 Avoidance, Minimization, and/or Mitigation Measures

The following measures would be implemented to reduce impacts to the sensitive natural community's in the Project area

Measure BIO-1 (Riparian Forest)

- The County will obtain a Lake and Streambed Alteration Agreement (LSAA) from the California Department of Fish and Wildlife (CDFW), pursuant to Section 1600 of the California Fish and Game Code (CFGC), that contains requirements for riparian forest mitigation. The County will compensate for permanent loss of riparian forest by purchasing credits at a CDFW approved mitigation bank. The County will compensate for the loss of riparian forest by purchasing credits at a minimum 1:1 ratio (1 credit-acre purchased for every 1 acre permanently affected; a total of 2.39 credit-acres). The County will adhere to all CDFW LSAA conditions.
- Tree removal will be minimized to the maximum extent possible.
- The limits of construction will be fenced by the County or Contractor to minimize impacts on retained trees.
- Trucks and other vehicles will not be allowed to park beyond, nor shall equipment be stored beyond, the fencing.
- No vegetation removal or ground disturbing activities will be permitted beyond the fencing.

Measure BIO-2 (Tuolumne River)

- Prior to work in the Tuolumne River, the appropriate Clean Water Act permits shall be acquired from the U.S. Army Corps of Engineers (Corps) and the Central Valley Regional Water Quality Control Board (RWQCB). The County will mitigate at a minimum 1:1 ratio for impacts to wetlands and waters of the State in accordance with the State of California's no-net-loss of wetlands policy and minimum mitigation ratio for impacts to wetlands and waters of the State. The County will comply with any compensatory mitigation requirement of a Clean Water Act Section 404 permit, Section 401 Water Quality Certification or CDFW LSAA as applicable.
- During construction, water quality will be protected by implementation of BMPs consistent with the Stanislaus County Storm Water Management Program (SWMP) and the current edition of the Departments' Stormwater Quality Handbooks to minimize the potential for siltation and downstream sedimentation of Tuolumne River.
- Riparian vegetation will be avoided and preserved to the maximum extent practicable. The limits of vegetation removal will be marked with temporary fencing or flagging.
- Channel access points will be flagged and used during site construction to minimize impacts to riverine and riparian habitats.
- Equipment will be refueled and serviced at designated construction staging areas. All construction material will be stored and contained in a designated area that is located

away from channels to prevent transport of materials into the adjacent Tuolumne River. The preferred distance is a minimum 100 feet from riparian habitat or water bodies. A silt fence will be installed and adequate materials for spill cleanup will be kept on site. Construction vehicles and equipment will be maintained to prevent contamination of soil and water from external grease and oil and from leaking hydraulic fluid, fuel, oil, and grease.

- All disturbed soils in the Project area will undergo erosion control treatment prior to October 15 and/or immediately after construction is terminated at the completion of the Project. Treatment includes temporary seeding and the application of sterile straw mulch or equivalent. Any disturbed soils on a gradient of over 30 percent will have erosion control blankets installed.
- Areas temporarily disturbed on the banks of Tuolumne River will be revegetated and reseeded with native grasses and other native herbaceous annual and perennial species prior to October 15 and/or immediately after construction is terminated at the completion of the Project in accordance with Appendix F (Revegetation Planting and Erosion Control Specifications) of the Project Natural Environment Study (NES). Reseeded areas will be covered with a biodegradable erosion control fabric to prevent erosion and downstream sedimentation. The project engineer will determine the specifications needed for erosion control fabric (e.g., sheer strength) based on anticipated maximum flow velocities and soil types. The seed type will consist of commercially available native grass and herbaceous species as described in Appendix F of the Project NES. No seed of nonnative species will be used unless certified to be sterile.
- In-water work (e.g. new pier construction) will be limited to the time of the year specified in wildlife agency permits (assumed to be July 1 through October 31). In-water work that is necessary outside of the permitted seasonal window will be isolated from the flowing channel with cofferdams, gravel berms, or similar approved structures. The contractor will prepare an isolation and dewatering plan for agency approval prior to working in wet areas outside of the seasonal window.
- Before the onset of construction activities, a qualified person will conduct an education program for all construction personnel. The training will include a description of all sensitive species with potential to occur in the Project area, their habitat requirements, the specific measures being taken to protect individuals of listed species in the project area, and the boundaries within which project activities will be restricted.
- Environmentally sensitive areas (ESAs) will be fenced to prevent encroachment of equipment and personnel into riparian areas, river channels and banks, and other sensitive habitats. ESAs will be clearly flagged for the duration of site construction. Access to and use of ESAs will be restricted. Vehicle fueling and staging areas will be located at least 100 feet from flagged ESAs.
- The contractor will prepare and implement a Stormwater Pollution Prevention Plan as required during permitting.
- Discharging pollutants from vehicle and equipment cleaning into any storm drains or watercourses is prohibited.
- Concrete waste materials, and other debris from demolition and construction activities will not be allowed to enter the flowing water of the Tuolumne River. Waste materials

will be disposed of offsite, at an approved location, where they cannot enter surface waters.

- A Spill Prevention, Control, and Countermeasures (SPCC) Plan will be developed to provide consistent, appropriate responses to spills that may reasonably be expected with implementation of the project. The SPCC Plan will be kept on-site during construction and the appropriate materials and equipment will also be on-site during construction to ensure the SPCC Plan can be implemented. Personnel will be knowledgeable in the use and deployment of the materials and equipment so response to an accidental spill will be timely.
- Water will be applied in construction areas, including access roadways, to control dust. Soil stockpiles will be covered when weather conditions require.
- Coir rolls, straw wattles, or similar materials will be used at the bases of slopes during construction to capture sediment.
- Graded areas will be protected from excessive erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion-control netting (such as jute or coir) as appropriate on sloped areas.
- Borrow or fill material used in the Project area shall be native or, if from offsite, certified to be non-toxic and weed free.

Measure BIO-3 (Seasonal Wetland)

- ESA fencing will be placed between the limits of construction and the seasonal wetland to prevent encroachment by construction equipment and personnel. The ESA fencing will be in place prior to commencement of construction. Trucks and other vehicles will not be allowed to park beyond, nor shall equipment be stored beyond the fencing. No vegetation removal or ground disturbing activities will be permitted beyond the fencing.

2.4.2 Wetlands and Other Waters

2.4.2.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark (OHWM), in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 11990 states that a federal agency, such as FHWA and/or the Department, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the Secretary of the Army, acting through the Corps of Engineers, for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, location, or condition of the water body.

Section 9 of the Rivers and Harbors Act prohibits the construction of any bridge, dam, dike or causeway over or in navigable waterways of the U.S. without Congressional approval. The United States Coast Guard (USCG) administers Section 9 and issues Bridge permits over navigable waters. Anyone proposing to build a bridge over navigable waters must obtain a bridge permit from the USCG.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCBs), and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional

Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for more details.

The Central Valley Flood Protection Board (CVFPB) is the State regulatory agency responsible for ensuring that appropriate standards are met for the construction, maintenance, and protection of the flood control system that protects life, property, and wildlife habitat in California's vast and diverse Central Valley from the devastating effects of flooding. CVFPB issues encroachment permits and works with other agencies to improve the flood protection structures, enforces removal of problematic encroachments, and keeps watch over the Central Valley's continually improving flood management system.

2.4.2.2 Affected Environment

Primary information sources for this section include the Project's, Aquatic Resources Delineation Report (ARDR, December 2019) and Project Natural Environment Study (NES, March 2020)).

Field work for the aquatic resources delineation was conducted on 30 March 2017 and 4 and 11 October 2017. Aquatic features in the Project area are listed in Table 2.4-3 and described below. The Corps verified the acreage of aquatic features in the Project area via letter on 18 June 2020.

Table 2.4-3. Summary of Features.

Feature	**Cowardin Classification**	**Length (feet)**	**Avg. Width (feet)**	**Area[1] (acre)**
Tuolumne River	R2UBH	875	158	3.17
Seasonal Wetland	PFOA	--	--	0.12
Faith Home Spill Ditch	R5UBFx	1,628	29	1.10
Ceres Main Canal	R2UBHx	2,835	46	2.99
Total:		**5,338**	**-**	**7.38**

[1] Acreages calculated with ESRI ArcMap functions.

Tuolumne River: The Tuolumne River is a perennial river that flows east to west through the Project area. The average width of the river within the Project area is 158 feet. The Tuolumne River drains to the San Joaquin River approximately 20 river miles west of the Project area. There is a riparian forest corridor along both banks of the Tuolumne River. The Tuolumne River was inundated and flowing at 9,760 cubic feet per second (cfs) during fieldwork on 30 March 2017, and at approximately 420 cfs during biological fieldwork in October 2017. The bed of the Tuolumne River consists of small cobble, sand and clay. Flow in the Tuolumne River is perennial. The ordinary high water mark (OHWM) of the Tuolumne River was identified in the field based on a natural line impressed on the bank, shelving, destruction of terrestrial vegetation, bed and banks, and a change in plant community.

Seasonal Wetland: A seasonal wetland occurs on the eastern edge of the Project area, in the riparian forest community north of the Tuolumne River. Approximately 0.12 acre of the seasonal wetland occurs within the Project area. The seasonal wetland occurs in a lower area of the riparian forest that inundates for a longer duration when the riparian forest floods. The seasonal wetland is dominated by hydrophytic vegetation such as nutsedge, and associates such as tumbleweed and curly dock. The soil is silty clay loam with redoximorphic concentrations in the matrix.

Ceres Main Canal: The Ceres Main Canal is an excavated irrigation ditch that is part of the TID water delivery system. This canal flows west from the City of Hughson, and runs parallel to East Hatch Road through the southern end of the Project area. Approximately 2,835 feet of the canal occur in the Project area, with an average width of 46 feet. The Ceres Main Canal is a concrete-lined ditch with sloped banks. A small bridge carries Faith Home Road across the ditch. At the intersection of Faith Home Road and East Hatch Road, water flows through a gate, north into the Faith Home Spill ditch, and eventually into the Tuolumne River. There are dirt roads for maintenance access on either side of the canal. Maintenance involves routinely dragging a chain across the bottom of the canal to uproot weeds and prevent vegetation growth. As a result, there is no vegetation in or on the banks of the canal. The canal flows during the summer months to convey irrigation water. It does not flow during the wet winter season.

Faith Home Spill Ditch: The Faith Home Spill ditch is an excavated ditch that carries water from the Ceres Main Canal, north to the Tuolumne River. This spill-ditch is a part of the TID system. The Faith Home Spill ditch is 1,628 feet long and has an average width of 29 feett. The Faith Home Spill ditch originates at a gate from the Ceres Main Canal, near the intersection of Faith Home Road and East Hatch Road. When water in the Ceres Main Canal reaches capacity, it is released from the gate and enters the Faith Home Spill ditch. It flows under East Hatch Road, north until it ends at a concrete-lined flume that releases water into the Tuolumne River. The ditch is characterized by steeply-sloped banks where mostly annual forbs and grasses grow densely. Dirt and gravel maintenance roads parallel both sides of the ditch. The ditch flows during the summer months, in response to flow of irrigation waters in the Ceres Main Canal. The ditch does not flow during the wet winter season.

2.4.2.3 Environmental Consequences

2.4.2.3.1 Build Alternative

The Tuolumne River and the seasonal wetland within the Project area are potential waters of the U.S. and waters of the state, respectively. The Ceres Main Canal and the Faith Home Spill Ditch in the Project area are ditches excavated wholly in and draining only uplands and are not USACE jurisdictional under the CWA. Project construction would result in a total of 0.28 acres of temporary impacts to the Tuolumne River resulting from the installation of pile bents that support the temporary work trestle and falsework. There would be 0.02 acre of permanent impacts to the Tuolumne River consisting of bridge columns and RSP within the OHWM. The Project would avoid impacts to the seasonal wetland. The Project would require a Section 404 Nationwide Permit (NWP #14) from USACE, a CVFPB Encroachment Permit, a Rivers and Harbors Act Section 10 Permit, a U.S. Coast Guard Section 9 Bridge Permit, a lease from CSLC, a Section 401 Water Quality Certification from the RWQCB, a NPDES Permit from the RWQCB, and a 1602 Streambed Alteration Agreement from CDFW. All permit conditions would be implemented.

2.4.2.3.2 No-Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly impact wetlands or waters.

2.4.2.4 Avoidance, Minimization, and/or Mitigation Measures

Measures BIO-1 (Riparian Forest**)**, BIO-2 (Tuolumne River), and BIO-3 (Seasonal Wetland) in section 2.4.1.3 would reduce impacts to wetland and waters in the Project area.

2.4.3 Plant Species

2.4.3.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. “Special-status” is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Species listed or proposed for listing as threatened or endangered are discussed in Section 2.4.5, Threatened and Endangered Species.

This section of the document discusses all other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Projects are also subject to the Native Plant Protection Act, found at California Fish and Game

Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), found at California Public Resources Code, Sections 21000-21177.

2.4.3.2 Affected Environment

Primary information sources for this section include the Project's Natural Environment Study (NES, March 2020).

Data received from USFWS, National Marine Fisheries Service (NMFS), the California Natural Diversity Database (CNDDB), and CNPS records were used to compile a table of regional species and habitats of concern. After analysis of the special-status species' habitat requirements and completion of biological surveys, it was determined that the special-status plant species listed in Table 2.4-4 have the potential to occur in the study area. Species listed in Table 2.4-4 are discussed further below.

Table 2.4-4. Special -Status Plant Species

Scientific Name	Common Name	Status*
Atriplex cordulata var*. cordulata*	Heartscale	1B.2
Atriplex minuscula	Lesser saltscale	1B.1
Atriplex subtilis	Subtle orach	1B.2
Monardella leucocephala	Merced monardella	1A
Puccinellia simplex	California alkali grass	1B.2

* **CNPS Rare Plant Rank**: 1A = Presumed Extinct in CA; 1B = Rare or Endangered in CA and elsewhere; 2 = Rare or Endangered in CA and more common elsewhere; 3 = More information is needed about this plant species (review list); 4 = Limited distribution (watch list)

CNPS Decimal Extensions: .1 = Seriously endangered in California (over 80 percent of occurrences threatened / high degree and immediacy of threat); .2 = Fairly endangered in California (20-80 percent occurrences threatened); .3 = Not very endangered in California (<20 percent of occurrences threatened or no current threats known).

Heartscale (*Atriplex cordulata var. cordulata*): Heartscale is an annual herb found in saline or alkaline soils in chenopod scrub, meadows and seeps, and sandy valley and foothill grasslands from 0 to 1,840 feet elevation. Blooms April through October. The Project area provides potential habitat for heartscale.

Lesser saltscale (*Atriplex minuscula*): Lesser saltscale is an annual herb found in sandy, alkaline soils in chenopod scrub, playas, and Valley and foothill grassland from 50 to 730 feet elevation. Blooms April through October. The Project area provides potential habitat for lesser saltscale.

Subtle orach (*Atriplex subtilis*): Subtle orach is an annual herb found in alkaline soils in Valley and foothill grassland from 120 to 300 feet elevation. Blooms June through October. The Project area provides potential habitat for Subtle orach.

Merced monardella (*Monardella leucocephala*): Merced monardella is an annual herb found in mesic, sandy soils of Valley and foothill grassland from 115 to 325 feet elevation. Last seen

in 1941. Blooms May through August. The Project area provides potential habitat for Merced monardella.

California alkali grass (*Puccinellia simplex*): California alkali grass is an annual herb found in alkaline or vernally mesic soils in sinks, flats and lake margins within chenopod scrub, meadows and seeps, Valley and foothill grasslands, and vernal pools from 6 to 3,050 feet elevation. Blooms March through May. The Project area provides potential habitat for California alkali grass.

2.4.3.3 Environmental Consequences

2.4.3.3.1 Build Alternative

Heartscale (Atriplex cordulata var. cordulata): Heartscale was not observed in the Project area during the biological survey conducted during the species evident and identifiable period. Implementation of BIO-4 would ensure impact avoidance.

Lesser saltscale (*Atriplex minuscula*): Lesser saltscale was not observed in the Project area during the biological survey conducted during the species evident and identifiable period. Implementation of BIO-4 would ensure impact avoidance.

Subtle orach (*Atriplex subtilis*): Subtle orach was not observed in the Project area during the biological survey conducted during the species evident and identifiable period. Implementation of BIO-4 would ensure impact avoidance.

Merced monardella (*Monardella leucocephala*): Merced monardella was not observed in the Project area during the biological survey. The survey was conducted outside of the species evident and identifiable period. If present the Project could impact this species. Implementation of BIO-4 would ensure impact avoidance.

California alkali grass (*Puccinellia simplex*): California alkali grass was not observed in the BSA during the biological survey. The survey was conducted outside of the species evident and identifiable period. If present the Project could impact this species. Implementation of BIO-4 would ensure impact avoidance.

2.4.3.3.2 No-Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly impact to special-status plant species.

2.4.3.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of BIO-4 would avoid potential impacts to heartscale, lesser saltscale, subtle orach, Merced monardella, and California alkali grass.

Measure BIO-4 (Special-Status Plants)

- A qualified biologist will conduct a preconstruction botanical survey in May for special-status plants.

- If special status plants are not detected during the survey, then no further avoidance and minimization measures will be required.
- If special-status plants are identified in the Project area, then 1) habitat occupied by special-status plants will be flagged as environmentally sensitive and avoided by construction, and 2) prior to construction all construction personnel will receive environmental training that covers identification of the special-status plant species, and the protective measures in place.
- If a State-listed rare plant species is found in the Project area and cannot be avoided, CDFW will be notified at least 10 days prior to construction in accordance with the California Native Plant Protection Act of 1977 (CFGC Sections 1900-1913) to allow sufficient time to transplant the individuals to a suitable location.

2.4.4 Animal Species

2.4.4.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The USFWS, the National Oceanic and NOAA Fisheries Service or NMFS), and the CDFW are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5, Threatened and Endangered Species. All other special-status animal species are discussed in this section, including CDFW fully protected species and species of special concern, and USFWS or NMFS candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code
- California Migratory Bird Protection Act (MBPA)

2.4.4.2 Affected Environment

Primary information sources for this section include the Project's, Natural Environment Study (NES, March 2020).

Data received from USFWS, NMFS, CNDDB, and CNPS records were used to compile a table of regional species and habitats of concern. After analysis of the special-status species' habitat requirements and completion of biological surveys, it was determined that the special-status

animal species listed in Table 2.4-5 have the potential to occur in the study area. Species listed in Table 2.4-5 are discussed further below.

Table 2.4-5. Special-Status Animal Species

Scientific Name	Common Name	Status*
Fish		
Mylopharodon conocephalus	Hardhead	SSC
Reptiles		
Anniella pulchra	Silvery legless lizard	SSC
Emys marmorata	Western pond turtle	SSC
Birds		
Birds covered by the Migratory Bird Treaty Act (MBTA) and CFGC §3503.5	--	--
Athene cunicularia	Burrowing owl	SSC
Mammals		
Corynorhinus townsendii	Townsend's big-eared bat	SSC

* **Status**: State Species of Special Concern (SSC)

2.4.4.2.1 Special-Status Fish

Hardhead (*Mylopharodon conocephalus*): Hardhead typically occur in low- to mid-elevation streams in the main Sacramento-San Joaquin drainage and in the Russian River, but they range from the Kern River to the Pit River in Modoc County. In the San Joaquin drainage, the species is scattered in tributary streams and absent from valley reaches of the San Joaquin River. Hardhead are typically found in undisturbed areas of larger low- to mid-elevation streams, although they are also found in the mainstem Sacramento River at low elevations and in its tributaries to about 4,920 feet. The Tuolumne River in the Project area provides suitable habitat for hardhead.

2.4.4.2.1 Special-Status Reptiles

Silvery legless lizard (SLL, *Anniella pulchra pulchra*): SLL occurs primarily in areas with sandy or loose loamy soils in sparsely vegetated habitats such as coastal sand dunes, chaparral, pine-oak woodland, desert scrub, open grassland, and riparian areas. The Project area provides potential habitat for SLL in the sandy soils of the riparian corridor on the banks of the Tuolumne River.

Western Pond Turtle (WPT; *Emys marmorata*): WPT prefer aquatic habitats with abundant vegetative cover and exposed basking sites such as logs. WPT are associated with permanent or nearly permanent water in a wide variety of habitat types, normally in ponds, lakes, streams,

irrigation ditches, or permanent pools along intermittent streams. This species will also temporarily use semi-permanent or ephemeral water bodies, including stock ponds, vernal pools, and seasonal wetlands. The Tuolumne River in the Project area provides suitable aquatic habitat for WPT. Suitable nesting habitat occurs along the banks of the river.

2.4.4.2.1 Special-Status Birds

Migratory Birds and Birds of Prey: CFGC 3503.5 protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds of prey). Birds of prey include raptors, falcons, and owls. Migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). All migratory bird species are protected by the MBTA. Any disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a 'take' of the species under federal law. The Project area provides potential nesting habitat for birds of prey and birds listed by the MBTA.

Burrowing Owl (*Athene cunicularia*): Burrowing owls inhabit open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats. Main habitat components include burrows for roosting and nesting, and relatively short vegetation with sparse shrubs and taller vegetation. Burrowing owls most commonly use ground squirrel burrows, but they may also use badger, coyote, and fox holes or dens; or human-made structures such as culverts, piles of concrete rubble, pipes and nest boxes. In agricultural areas, owls nest along roadsides, under water conveyance structures, and near and under runways and similar structures. In urban areas, burrowing owls persist in low numbers in highly developed parcels, busy urban parks, and adjacent to roads with heavy traffic. The disturbed/ruderal edges of dirt roads, the dirt banks of the Faith Home Spill ditch, and the spoils piles south of the Tuolumne River in the Project area provide potential habitat for burrowing owls.

2.4.4.2.1 Special-Status Mammals

Townsend's big-eared Bat (*Corynorhinus townsendii*): Townsend's big-eared bat is listed as a state species of special concern. They are a medium-sized bat with very long "rabbit-like" ears that generally roost in caves, tunnels, or abandoned mines. Habitat associations include: coniferous forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. The habit of roosting pendant-like on open surfaces makes this species readily detectable, and it can be the bat species most readily observed, when present (commonly in low numbers) in caves and abandoned mines throughout its range.

In addition to caves and abandoned mines, Townsend's big-eared bat has also been reported to utilize buildings, bridges, rock crevices, and hollow trees as roost sites. Mesic habitats are preferred due to relatively poor urine concentrating ability and the need to drink water relatively frequently. The peak activity of this species is late in the evening preceded by flights close to the roost. They are moth specialists, with up to 90 percent of their diet being composed of lepidopterans, though beetles and a variety of soft-bodied insects are also taken.

Most mating occurs from November to February, and maternity colonies form between March and June (based on local climactic factors). A single pup is born between May and July, and maternity groups begin to break up in August. Males and yearlings roost separately during the maternity period.

Townsend's big-eared bats occur throughout the west, and are distributed from the southern portion of British Columbia south along the Pacific coast to central Mexico and east into the Great Plains, with isolated populations occurring in the central and eastern United States. In California, they are found everywhere except subalpine and alpine habitats.

The commercial buildings near the intersection of Finch Road and Garner Road, and trees in the riparian forest within the Project area provide suitable roosting habitat for this species.

2.4.4.2.2 Common Wildlife Species

Numerous common wildlife species have potential to occur in the Project area. Common amphibian and reptile species with potential to occur include, but are not limited to: common kingsnake (*Lampropeltis getula*), gopher snake (*Pituophis catenifer*), common garter snake (*Thamnophis sirtalis*), western terrestrial garter snake (*Thamnophis elegans*), southern alligator lizard (*Elgaria multicarinata*), western fence lizard (*Sceloporus occidentalis*), Sierran treefrog (*Pseudacris sierra*), and western toad (*Anaxyrus boreas*).

Common bird species with potential to occur include, but are not limited to: wild turkey (*Meleagris gallopavo*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), American robin (*Turdus migratorius*), Anna's hummingbird (*Calypte anna*), belted kingfisher (*Megaceryle alcyon*), black-headed grosbeak (*Pheucticus melanocephalus*), bushtit (*Psaltriparus minimus*), Bullock's oriole (*Icterus bullockii*), California quail (*Callipepla californica*), California towhee (*Melozone crissalis*), house wren (*Troglodytes aedon*), northern flicker (*Colaptes auratus*), spotted towhee (*Pipilo maculatus*), and yellow-billed magpie (*Pica nuttalli*).

Common mammal species with potential to occur include, but are not limited to: coyote (*Canis latrans*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), American mink (*Mustela vison*), common muskrat (*Ondatra zibethicus*), black-tailed jackrabbit (*Lepus californicus*), raccoon (*Procyon lotor*), and Virginia opossum (*Didelphis virginiana*).

2.4.4.3 Environmental Consequences

2.4.4.3.1 Build Alternative

Special-Status Fish

Hardhead (*Mylopharodon conocephalus*): Hardhead have been identified in this stretch of the river during multiple surveys reported by the Turlock and Modesto Irrigation Districts between 2004 and 2011. Hardhead were not observed in the Tuolumne River during biological surveys. Project activities have the potential to disturb hardhead if present during construction.

Special-Status Reptiles

Silvery legless lizard (SLL, *Anniella pulchra pulchra*): SLL were not observed in the Project area during the biological surveys. Project activities have the potential to disturb silvery legless lizard if present during construction.

Western Pond Turtle (WPT; *Emys marmorata*): WPT were not observed in the Project area during the biological surveys. Project activities have the potential to disturb WPT if present during construction.

Special-Status Birds

Migratory Birds and Birds of Prey: No active nests were found within the Project area during the surveys. Project activities have the potential to disturb nesting birds protected by the MBTA and Fish and Game Code Section 3503.5 if present during construction.

Burrowing Owl (*Athene cunicularia*): Burrowing owls and potential burrows were not observed during the biological surveys in the Project area. Project activities have the potential to disturb burrowing owls if present during construction.

Special-Status Mammals

Townsend's big-eared Bat (*Corynorhinus townsendii*): No Townsend's big-eared bats were observed in the Project area during the biological surveys. Project activities have the potential to disturb this species if present during construction.

2.4.4.3.2 No-Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly impact special-status animal species.

2.4.4.4 Avoidance, Minimization, and/or Mitigation Measures

2.4.4.4.1 Special-Status Fish

Hardhead (*Mylopharodon conocephalus*): Implementation of measures BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), and BIO-12 (Steelhead – California Central Valley) would reduce potential impacts to hardhead.

2.4.4.4.2 Special-Status Reptiles

Silvery legless lizard (SLL, *Anniella pulchra pulchra*): Implementation of BIO-5 (Silvery legless lizard) below and BIO-1 (Riparian Forest) would reduce potential impacts to SLL.

Measure BIO-5 (Silvery legless lizard)

- Prior to construction activities, a qualified biologist shall conduct an Employee Education Program for the construction crew. The biologist shall meet with the construction crew at the site at the onset of construction to educate the construction crew on the following: 1) a review of the project boundaries including staging areas and access routes; 2) the special-status species that may be present, their habitat, and proper identification; 3) the

specific avoidance and minimization measures that will be incorporated into the construction effort; 4) the general provisions and protections afforded by the USFWS and the CDFW; and 5) the proper procedures if a special-status animal is encountered within the project site.

- The biological monitor shall be on-site during initial vegetation removal activities to protect any special-status species encountered. Protection methods could include, but are not limited to, stopping work in the area where the animal is encountered until it has moved on its own outside of the site or moving individuals outside of the site to adjacent appropriate habitat.

Western Pond Turtle (WPT; *Emys marmorata*): Implementation of BIO-6 (Western Pond Turtle) below and BIO-1 (Riparian Forest) would reduce potential impacts to WPT.

Measure BIO-6 (Western Pond Turtle)

- A biologist shall conduct a preconstruction survey for WPT within 48 hours prior to the onset of vegetation removal or ground disturbance in the Project area. If any WPT are found, construction activities will stop to allow the biologist sufficient time to relocate the WPT. WPT will be relocated to the closest suitable habitat where they will not be affected by construction. Detailed records of individuals that are relocated should be maintained by the CDFW-approved biologist, to determine whether translocated individuals are returning to the project area. These records should include size, coloration, any distinguishing features, and photographs.

- During construction, if a WPT is observed in the active construction zone, construction will cease and a qualified biologist will be notified. Construction will resume when the biologist has either relocated the WPT out of the construction zone to nearby suitable habitat, or, after thorough inspection, determined that the WPT has moved away from the construction zone.

2.4.4.4.3 Special-Status Birds

Migratory Birds and Birds of Prey: Implementation of BIO-7 below would reduce potential impacts to migratory birds and birds of prey.

Measure BIO-7 (Migratory Birds and Birds of Prey)

- If construction begins outside the 15 February to 31 August breeding season, there will be no need to conduct a preconstruction survey for active nests.

- Vegetation scheduled for removal should be removed during the non-breeding season from 1 September to 14 February. Vegetation may be removed using hand tools, including chain saws and mowers, and may be trimmed several inches above the ground with the roots left intact to prevent erosion.

- If construction or vegetation removal begins between 15 February and 31 August, a biologist shall conduct a survey for active bird of prey nests within 250 feet and active MTBA bird nests within 100 feet of the BSA from accessible areas within one week prior

to construction. The measures listed below shall be implemented based on the survey results.

No Active Nests Found:

- If no active nest of a bird of prey, MBTA bird, or other CDFW protected bird is found, then no further avoidance and minimization measures are necessary.

Active Nests Found:

- If an active nest of a bird of prey, MBTA bird, or other CDFW protected bird is discovered that may be adversely affected by construction activities or an injured or killed bird is found, immediately:
    - Stop all work within a 100-foot radius of the active nest
    - Notify the Engineer
    - Do not resume work within the specified radius of the discovery until authorized.
- In accordance with the table below the biologist shall establish a minimum 250-foot Environmentally Sensitive Area (ESA) around the nest if the nest is of a bird of prey, and a minimum 100-foot ESA around the nest if the nest is of an MBTA bird other than a bird of prey.

Species Protection Areas

Identification	Location
Bird of Prey	250 feet no-disturbance buffer
MBTA protected bird (not bird of prey)	100 feet no-disturbance buffer

- Activity in the ESA will be restricted as follows:
    - Do not enter the ESA unless authorized.
    - If the ESA is breached, immediately:
        - Secure the area and stop all operations within 60 feet of the ESA boundary
        - Notify the Engineer
    - If the ESA is damaged, the County determines what efforts are necessary to remedy the damage and who performs the remedy.
- No construction activity shall be allowed in the ESA until the biologist determines that the nest is no longer active, or unless monitoring determines that a smaller ESA will protect the active nest.

- The ESA may be reduced if the biologist monitors the construction activities and determines, in consultation with CDFW, that no disturbance to the active nest is occurring. Reduction of the ESA depends on the species of bird, the location of the nest relative to the Project, Project activities during the time the nest is active, and other Project-specific conditions.

- Between 15 February and 31 August, if additional trees or shrubs need to be trimmed and/or removed after construction has started, a survey will be conducted for active nests in the area to be affected. If an active nest is found, the above measures will be implemented.

- If an active nest is identified in or adjacent to the construction zone after construction has started, the above measures will be implemented to ensure construction is not causing disturbance to the nest.

Burrowing Owl (*Athene cunicularia*): Implementation of BIO-8 would reduce potential impacts to burrowing owl.

Measure BIO-8 (Burrowing Owl)

- During the burrowing owl non-breeding season (1 September to 31 January) of the winter prior to construction, it is recommended that a biologist survey the Project area for wintering burrowing owls or potential denning habitat. If wintering burrowing owls are found in the Project area, they should be passively excluded in accordance with the CDFW 2012 guidelines, prior to the start of the nesting season.

2.4.4.4.4 Special-Status Mammals

Townsend's big-eared Bat (*Corynorhinus townsendii*): Implementation of measure BIO-9 would reduce potential project impacts to this species.

Measure BIO-9 (Bats)

- A preconstruction survey will be performed by a qualified biologist to determine if bat species are roosting in hollow trees in the Project area. The survey will be performed prior to April 1, before the bats have given birth. If bats are roosting in the Project area, exclusion of these bats shall take place prior to construction.

- To identify the presence of potential resident Townsend's big-eared bats, potential roost trees within the project area shall be surveyed by a qualified biologist within 15 days prior to removal to determine if bats are present or if any trees can be excluded as suitable bat roosts due to the lack of suitable structural characteristics. The survey method shall include visual verification to identify guano and other evidence of bat presence. If it is determined that bats are not using the trees, or the trees can be excluded as bat roosts, removal of these trees would not be subject to the seasonal restrictions.

- All potential roost trees (i.e., 20-inch diameter breast height (DBH) or greater), including snags, shall be removed from the project site between September 1 and October 31, which is outside of the bat breeding and hibernation season and when Townsend's big-eared bat densities in the Central Valley are lowest. Removal of trees during this period will reduce impacts to any bats or their young occurring on the project site during the breeding season or during winter hibernation.

- If a potential roost is identified, methods to evict the bats shall consist of the following:

    - Ultrasound deterrents or other sensory irritants may be set up to encourage bats to depart from the site on their own. Deterrents shall be set up late in the day or in the evening during weather and temperature conditions conducive to bat activity to reduce the likelihood of evicted bats falling prey to diurnal predators.

    - Prior to tree removal, confirmed roost trees would be shaken, repeatedly struck with a heavy implement such as an ax and several minutes should pass before felling trees to allow bats time to arouse and leave the tree.

2.4.5 Threatened and Endangered Species

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA) (and the Department, as assigned), are required to consult with the USFWS and the NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of FESA defines "take as" "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the CESA, California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The CDFW is the agency responsible for implementing CESA. Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. "Take" is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

2.4.5.1 Affected Environment

Primary information sources for this section include the Project's Natural Environment Study (NES, March 2020) and Biological Assessment (BA, June 2020).

Data received from USFWS, NMFS, CNDDB, and CNPS records were used to compile a table of regional species and habitats of concern. After analysis of the special-status species' habitat requirements and completion of biological surveys, it was determined that the special-status animal species listed in Table 2.4-6 have the potential to occur in the study area. Species listed in Table 2.4-6 are discussed further below. The Project would have no effect on all other species listed on the USFWS and NMFS lists for the Project.

Table 2.4-6. Threatened and Endangered Species

Scientific Name	Common Name	Status [a,b]
Plants		
Eryngium racemosum	Delta coyote-thistle	E/ 1B.1 (state)
Invertebrates		
Branchinecta lynchi	Vernal pool fairy shrimp	T, CH (fed)
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT, CH (fed)
Lepidurus packardi	Vernal pool tadpole shrimp	E, CH (fed)
Fish		
Oncorhynchus mykiss	Steelhead – California Central Valley (CCV) DPS	T, CH (fed)
Essential Fish Habitat (EFH) for *Oncorhynchus tshawytscha*	Essential Fish Habitat (EFH) for Chinook Salmon	EFH
Birds		
Agelaius tricolor	Tricolored blackbird	T (state)
Buteo swainsoni	Swainson's hawk	T (state)

[a] **Status**: Endangered (E); Threatened (T); Proposed (P); Candidate Endangered (CE), Candidate Threatened (CT), Delisted (D), Fully Protected (FP); Rare (R); Proposed Critical Habitat (PCH); Critical Habitat (CH) – Critical habitat has been designated for this species; (EFH) Essential Fish Habitat.

[b] **CNPS Rare Plant Rank**: 1A = Presumed Extinct in CA; 1B = Rare or Endangered in CA and elsewhere; 2 = Rare or Endangered in CA and more common elsewhere; 3 = More information is needed about this plant species (review list); 4 = Limited distribution (watch list).

CNPS Decimal Extensions: .1 = Seriously endangered in California (over 80 percent of occurrences threatened / high degree and immediacy of threat); .2 = Fairly endangered in California (20-80 percent occurrences threatened); .3 = Not very endangered in California (<20 percent of occurrences threatened or no current threats known).

2.4.5.1.1 Plants

Delta coyote-thistle (*Eryngium racemosum*): Delta coyote-thistle is an annual to perennial herb found in vernally mesic clay depressions in riparian scrub from 10 to 100 feet elevation. Blooms June through October. The riparian forest in the Project area provides potential habitat for Delta coyote-thistle, a state listed endangered species.

2.4.5.1.2 Invertebrates

Vernal pool Fairy shrimp (VPFS; *Branchinecta lynchi*): Vernal pool fairy shrimp (VPFS) was listed as a federal threatened species on 19 September 1994 (FR 59:48136). VPFS inhabit a wide variety of vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. VPFS sometimes occur in other areas of similar hydrology that pool for sufficient, continuous duration to support its average reproductive period of 43 days. VPFS do not occur in perennial waters or creeks. They are most commonly found in small (less than 0.05 acre), clear to tea-colored vernal pools with mud, grass, or basalt bottoms in unplowed grasslands. VPFS tends to occur in smaller pools than other *Branchinecta* species. Populations exist within and are defined by entire vernal pool complexes, rather than individual vernal pools. VPFS have rarely been collected from the same pools as other fairy shrimp species. When coexistence does occur, it has been in longer lived pools and the VPFS are often less abundant than other fairy shrimp species. It is possible that the absence of the VPFS in certain habitats is explained by competitive exclusion by other fairy shrimp. Vernal pool tadpole shrimp are predators of VPFS. VPFS are known to occur from Shasta County south through the Central Valley. They also occur in the Coast Range from Solano County south to San Benito County. Other populations are known from San Luis Obispo, Santa Barbara, and Riverside Counties, and Jackson County of southern Oregon. Fairy shrimp of the genus *Branchinecta* were observed in the five puddles totaling 0.168 acre that occur south of the railroad tracks on 30 March 2017.

Vernal pool tadpole shrimp (VPTS; *Lepidurus packardi*): VPTS occurs in vernal pools and sometimes other areas of similar hydrology across the Central Valley of California and in the San Francisco Bay Area. It requires a minimum of about 25 days to mature, and usually inhabits large, deep vernal pools that pool continuously for many months (USFWS 2005). They can also make use of smaller pools that are present as part of a larger vernal pool complex (Helm 1998), and they may be able tolerate temporary dry conditions. Populations exist within and are defined by entire vernal pool complexes, rather than individual vernal pools. VPTS inhabit a wide variety of vernal pool habitats. They are most commonly found in grass or mud-bottomed pools. VPTS have been collected in vernal pools ranging from 6.5 square feet to 88 acres. The puddles near the railroad tracks are poor habitat for VPTS. VPTS are usually found in large, deep vernal pools that are inundated continuously for many months. Smaller pools, such as these puddles, are only occupied by VPTS if they are a part of a much larger vernal pool complex. Without protocol branchiopod surveys, VPTS are assumed to be present.

Valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*): VELB is a small (0.5 to 0.8 inches long) wood-boring beetle found only in association with elderberry (*Sambucus* spp.), its obligate larval host plant. Eggs are laid on living elderberry shrubs. In the Central Valley, elderberry shrubs occur most commonly in riparian forests, riparian forest margins, and grassy savannas. Elderberries also occur in oak woodland, mixed chaparral-foothill woodland, and other contexts. Healthy riparian systems supporting dense elderberry

clumps are the primary habitat of VELB. The USFWS considers elderberry shrubs in riparian contexts within the range of VELB to be 'suitable habitat, likely occupied' regardless of whether exit holes are observed. In non-riparian contexts, the USFWS may consider elderberry shrubs to be unoccupied based on the results of exit hole surveys and an analysis of regional context, including proximity to riparian areas and known VELB populations.

The Project area occurs within the range of VELB. Sixty-five elderberry shrubs with stems at least one inch in diameter at ground level were mapped in the Project area. Eighteen of the shrubs occur in riparian habitat near the Tuolumne River. The remaining 47 shrubs occur along access roads between agricultural fields, within the historic floodplain of the Tuolumne River. The shrubs in this non-riparian habitat, isolated by fragmentation from the remaining riparian corridor, may provide important linkages to other riparian areas, and may still support VELB.

2.4.5.1.3 Fish

Steelhead – California Central Valley (CCV) DPS (*Oncorhynchus mykiss*): CCV steelhead was listed as a federal threatened species on 19 March 1998 and reaffirmed as threatened on 5 January 2006. The 2006 NMFS ruling applied the Distinct Population Segment (DPS) Policy (61 FR 4722; 7 February 1996) to the species because the resident and anadromous life forms of steelhead remain "markedly separated," and may therefore warrant delineation as a separate DPS. CCV steelhead are an anadromous salmonid species that hatch in freshwater and migrate to the ocean, where they grow until they are ready to return to freshwater to spawn. Unlike Pacific salmon, some steelhead survive after spawning; however, survival rates after spawning are quite low. Surviving steelhead are more often females. The Tuolumne River in the Project area is a perennial river with high flows that provides suitable migration habitat for anadromous CCV steelhead.

NMFS designated critical habitat for 7 Evolutionarily Significant Units (ESUs) of Pacific salmon and steelhead in California in September 2005. The Tuolumne River is designated critical habitat for Central Valley steelhead DPS. The stretch of the Tuolumne River in the Project area is considered critical habitat for adult migration and juvenile rearing and migration.

Essential Fish Habitat for Chinook Salmon (*Oncorhynchus tshawytscha*): Under the Magnuson-Stevens Fishery Conservation and Management Act, the Pacific Fishery Management Council (PFMC) manages salmon fisheries through the designation of essential fish habitat **(**EFH) and monitoring of threats to that habitat from both fishing and non-fishing activities. EFH includes waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA § 3(10)). "Waters" include all aquatic areas and their associated physical, chemical, and biological properties that are used by fish, or in some cases, that were historically used by fish. "Substrates" include sediment, hard bottom structures underlying the waters, and associated biological communities (50 CFR 600.10).

EFH for Pacific salmon, including Chinook salmon, was designated in December 2014. For Pacific salmon, the geographic extent of freshwater EFH is specifically defined as all currently viable waters and most of the habitat historically accessible to salmon within a USGS hydrologic unit (PFMC 1999). Areas upstream of long-standing natural barriers, such as large waterfalls, are excluded. Essential habitat types include 1) juvenile rearing areas, 2) juvenile migration corridors, 3) areas for growth and development into adulthood, 4) adult migration corridors, and

5) spawning areas (FR 65:7773). Habitat Areas of Particular Concern (HAPCs) are an important subset of essential habitat. HAPCs for Pacific salmon are: (1) complex channels and floodplain habitats; (2) thermal refugia; (3) spawning habitat; (4) estuaries and; (5) marine and estuarine submerged aquatic vegetation.

Federal action agencies must determine if a proposed action (1) "would not adversely affect", or (2) "may adversely affect" EFH. If a determination is made that an action may adversely affect EFH, it may be necessary to include measures in the proposed action to avoid, minimize, or mitigate for the effect. “Adverse effect” is defined as, “any impact that reduces quality and/or quantity of EFH” including, “direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH” (50 CFR § 600.810). Adverse effects may be caused by actions occurring outside of EFH and/or through cumulative consequences of actions.

Chinook salmon EFH includes all those streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon in Washington, Oregon, Idaho, and California. Chinook salmon EFH excludes areas upstream of longstanding naturally impassible barriers (i.e. natural waterfalls in existence for several hundred years), but includes aquatic areas above all artificial barriers except specifically named impassible dams. The Tuolumne River within the Project area is designated Chinook salmon EFH.

2.4.5.1.4 Birds

Tricolored Blackbird (*Agelaius tricolor*): Tricolored blackbirds form the largest breeding colonies of any North American inland bird species. Colonies vary in size from a minimum of about 50 nests to over 20,000 in an area of 10 acres or less. The tricolored blackbird is listed as threatened under CESA.

Basic breeding site requirements are open, accessible water; a protected nesting substrate, including either flooded or thorny or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few kilometers of the nesting colony. Historically, most colonies nested in freshwater marshes dominated by cattails or tules, while some colonies nested in nettles, thistles, and willows. However, the use of freshwater marshes as breeding colony sites has decreased. An increasing percentage of colonies since the 1970s have been reported in Himalayan blackberry and thistles, and some of the largest recent colonies were in silage and grain fields near dairies in the San Joaquin Valley. Other less commonly used substrates include safflower, tamarisk, elderberry, western poison oak, giant reed, riparian scrublands, and riparian forests.

Ideal foraging conditions for this species are created when shallow flood irrigation, mowing, or grazing keeps the vegetation less than 6 inches tall. Preferred foraging habitats include crops such as rice, alfalfa, irrigated pastures, and ripening or cut grain fields, as well as annual grasslands, cattle feedlots, and dairies. Tricolored blackbirds also forage in native habitats, including wet and dry vernal pools and other seasonal wetlands, riparian scrub habitats, and open marsh borders. Proximity to suitable foraging habitat appears important for the establishment of colony sites.

In California, tricolored blackbird breeding occurs in the Sacramento and San Joaquin valleys, the foothills of the Sierra Nevada south to Kern County, the coastal slope from Sonoma County south to the Mexican border, and sporadically, the Modoc Plateau.

Swainson's Hawk (*Buteo swainsoni*): Swainson's hawk is state listed as threatened species that breed from late March to late August, with peak activity late May through July. Nesting habitat includes stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Orchards do not provide foraging habitat for Swainson's hawk Swainson's hawk. Nests are built on a platform of sticks, bark, and fresh leaves in a tree, bush, or utility pole from 4 to 100 feet above the ground. Swainson's hawk will often return to areas where they nested the previous year. Swainson's hawk forage in grasslands or suitable grain or alfalfa fields, or livestock pastures adjacent to nesting areas. They feed on mice, gophers, ground squirrels, rabbits, large arthropods, amphibians, reptiles, birds, and rarely, fish.

2.4.5.2 Environmental Consequences

2.4.5.2.1 Build Alternative

Plants

Delta coyote-thistle (*Eryngium racemosum*): Delta coyote-thistle was not observed in the Project area during the biological survey conducted during the evident and identifiable period.

Invertebrates

Vernal pool Fairy shrimp (VPFS; *Branchinecta lynchi*): Fairy shrimp of the genus *Branchinecta* were observed in the five puddles totaling 0.168 acre that occur south of the railroad tracks on 30 March 2017. Conclusive identification to the species level requires permission from USFWS to conduct protocol fairy shrimp surveys. Protocol-level fairy shrimp surveys were not conducted. Without protocol fairy shrimp surveys, VPFS are assumed to be present in the five puddles. There is no VPFS critical habitat within or near the Project area.

The proposed Project footprint cannot avoid the puddles where fairy shrimp were observed. The Project would impact 0.168 acre of puddles occupied by fairy shrimp of the genus *Branchinecta*. Without protocol fairy shrimp surveys to conclusively identify the species, USFWS considers the puddles to be occupied by VPFS. As a result, the Project may affect, and is likely to adversely affect VPFS.

Vernal pool tadpole shrimp (VPTS; *Lepidurus packardi*): The puddles near the railroad tracks are poor habitat for VPTS. Fairy shrimp (*Branchinecta* sp.) were observed in these puddles, which suggests that the puddles may remain inundated long enough for VPTS to mature. However, VPTS are usually found in large, deep vernal pools that are inundated continuously for many months. Smaller pools, such as these puddles, are only occupied by VPTS if they are a part of a much larger vernal pool complex. Protocol-level branchiopod surveys were not conducted. Without protocol branchiopod surveys, VPTS are assumed to be present. The proposed Project footprint cannot avoid the puddles where VPTS are assumed to be present. The Project would impact 0.168 acre of puddles. As a result, the Project may affect, and is likely to adversely affect VPTS.

Valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*):
Elderberry shrub stems were searched for potential VELB exit holes. VELB exit holes were observed on three of the non-riparian elderberry shrubs in the Project area. No exit holes were observed on riparian elderberry shrubs. No VELB were observed in the Project area. Table 2.4-7 below identifies the number of stems counted in each of three size categories, whether the shrub was found in riparian habitat, and whether exit holes were observed. Based on the suitability of the contiguous riparian habitat, density and size of host shrubs, proximity to known occurrences, and presence of exit holes, the elderberry shrubs in the Project area are considered likely occupied.

The Project would remove 9 riparian elderberry shrubs growing in Valley Oak riparian forest on the south bank of the Tuolumne River and the forest north of the river, and 2 elderberry shrubs located in agricultural land in the north end of the Project area. There would be a total of 1.14 acres of impacts to riparian forest with elderberry shrubs. A total of 0.10 acre of non-riparian elderberry habitat would be permanently impacted. Regardless of whether exit holes occur, the USFWS considers elderberry shrubs growing in riparian habitat within the current or historic range of VELB to be 'suitable habitat, likely occupied.' The Project may affect, and is likely to adversely affect VELB.

There are 13 additional elderberry shrubs that are within 165 feet of the Project footprint, and may be indirectly impacted by the Project. These nearby, avoided elderberry shrubs are at risk of temporary exposure to stressors such as noise and dust due to their proximity to construction activities.

Table 2.4-7. Elderberry Shrub Table

Elderberry Shrub No.	1-3 inch diameter stem count	3-5 inch diameter stem count	>5 inch diameter stem count	Riparian?	Exit holes present?	Proposed for removal?
EB 1	0	0	3	No	No	No
EB 2	1	1	1	No	No	No
EB 3	1	0	0	No	No	Yes
EB 4	0	0	3	No	No	No
EB 5	2	0	0	Yes	No	Yes
EB 6	0	1	0	Yes	No	No
EB 7	1	0	0	Yes	No	No
EB 8	13	3	1	Yes	No	No
EB 9	0	1	0	Yes	No	Yes
EB 10	0	0	1	Yes	No	Yes
EB 11	0	3	0	Yes	No	Yes
EB 12	13	1	1	Yes	No	No
EB 13	0	0	3	Yes	No	No
EB 14	0	0	1	Yes	No	No
EB 15	0	1	1	Yes	No	No
EB 16	3	1	1	Yes	No	Yes
EB 17	0	0	1	Yes	No	Yes
EB 18	0	1	0	Yes	No	Yes
EB 19	4	0	0	Yes	No	No
EB 20	1	0	1	Yes	No	No
EB 21	0	0	1	Yes	No	No
EB 22	2	0	0	Yes	No	No
EB 23	2	0	0	Yes	No	No
EB 24	1	0	0	Yes	No	No
EB 25	1	0	1	No	No	Yes

EB 26	0	2	3	No	No	No
EB 27	0	0	1	No	No	No
EB 28	1	0	5	No	No	No
EB 29	0	0	1	No	No	No
EB 30	2	1	1	No	No	No
EB 31	8	6	3	No	Yes	No
EB 32	0	0	1	No	No	No
EB 33	0	0	1	No	Yes	No
EB 34	0	4	4	No	No	No
EB 35	0	0	3	No	No	No
EB 36	2	1	3	No	No	No
EB 37	1	1	1	No	No	No
EB 38	1	0	1	No	No	No
EB 39	4	3	3	No	No	No
EB 40	4	0	0	No	No	No
EB 41	0	1	1	No	No	No
EB 42	0	0	1	No	No	No
EB 43	0	2	1	No	No	No
EB 44	0	0	1	No	No	No
EB 45	0	0	1	No	No	No
EB 46	0	0	1	No	No	No
EB 47	3	1	1	No	No	No
EB 48	2	1	2	No	No	No
EB 49	0	0	1	No	No	No
EB 50	6	7	3	No	No	No
EB 51	5	4	2	No	No	No
EB 52	2	2	1	No	No	No
EB 53	5	3	1	No	No	No
EB 54	0	1	1	No	No	No
EB 55	2	0	2	No	No	No
EB 56	0	0	1	No	No	No
EB 57	5	1	0	No	No	No
EB 58	1	0	0	No	No	No
EB 59	2	0	0	No	No	No
EB 60	7	4	0	No	No	No
EB 61	6	4	2	No	No	No
EB 62	4	0	0	No	No	No
EB 63	13	4	0	No	No	No
EB 64	0	4	0	No	No	No
EB 65	0	0	1	No	Yes	No

Fish

Steelhead – California Central Valley (CCV) DPS (*Oncorhynchus mykiss*): Tuolumne River in the Project area provides suitable migration habitat and juvenile rearing habitat for CCV steelhead. CCV steelhead were not observed in Tuolumne River during biological surveys. Recent snorkel surveys in this stretch of the river have reported between 109 to 56,973 individual steelhead. Within the Project area, the channel consists of silty substrates, and lacks the gravelly substrates required for spawning. The river has riparian vegetation and overhanging cover required to provide suitable habitat for rearing juveniles.

The Project may result in up to 0.28 acre of temporary impacts and 0.02 acre of permanent impacts to the Tuolumne River, a jurisdictional water of the U.S. and State. All of the permanent impacts and 0.18 acre of the temporary impacts are to shaded riverine aquatic (SRA) habitat within the Tuolumne River. The remaining 0.10 acre of temporary impacts are to the open channel. The temporary impacts consist of the installation of temporary work trestles and falsework. The permanent impacts consist of bridge columns and RSP within the OHWM of the

river. Exposure to construction personnel, equipment and falsework in the river puts CCV steelhead in danger of being directly injured by construction personnel or equipment and increases the risk for a reduction in water quality. With implementation of the avoidance and minimization measures, the Project may still result in direct effects to CCV steelhead. Thus, the Project may affect, and is likely to adversely affect CCV steelhead.

Upon completion of the bridge, the river and riparian corridor would be restored to original conditions. The Project would result in approximately 0.02 acre of permanent alteration of the Tuolumne River due to the construction of the bridge columns and RSP installation. These permanent impacts would not significantly reduce the habitat quality for CCV steelhead. The quantity of impacts to the habitat are minimal compared to the surrounding available habitat. The Project may affect, but is not likely to adversely affect CCV steelhead critical habitat.

Hydroacoustic Analysis: This section summarizes the analysis of the hydroacoustic effects of pile driving on fish, particularly California Central Valley (CCV) steelhead, from construction of a new bridge over the Tuolumne River at Faith Home Road. Bridge construction will require the installation of a temporary work trestle and falsework to support the new bridge, each with fifteen bents (11 below the Tuolumne River OHWM and 4 above) on 14-inch steel H piles. The piles for the falsework bents and work trestle will be vibrated in with a vibratory hammer, then load restrike tested (proofed) at one pile per falsework bent and two in-water trestle piles totaling seventeen piles. Testing will require a maximum thirty strikes per pile at a rate of up to three falsework bent piles and one trestle pile per day in-water (120 strikes) for two days. A maximum of three falsework bent piles would be tested on land for one day (90 strikes). A bubble curtain will be used around all in-water piles to attenuate sound.

The permanent bridge foundation includes twenty-two 14-inch steel H piles at each of the north and south abutments. The abutment piles will be driven with an impact hammer at a maximum of thirty strikes per pile at a rate of up to ten piles per day (300 strikes) over two days. The north abutment piles will be installed 1,500 feet north and above the Tuolumne River OHWM. The south abutment piles will be installed approximately 100 feet south of the OHWM.

The user spreadsheet for the NMFS 2018 Revision to: *Technical Guidance for assessing the effects of anthropogenic Noise on Marine Mammal Hearing: Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts (Version 2.0), method E.1-2 (Single Strike Equivalent)* was used for the hydroacoustic effect analysis. Pile driving for load restrike testing the falsework bent piles and work trestle piles, and for installation of the south abutment piles was included in analysis. Noise from the vibratory hammer and pile driving at the north abutment were not included. Per the 2015 Caltrans Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish, resource agencies are not typically concerned that vibratory hammering adversely affects fish. The north abutment would not affect fish due to its location on land 0.3 mile from the Tuolumne River.

Sound level values for 14-inch steel H piles (Peak and SEL measured 10 meters from source) from Caltrans (2015) Appendix IV, Tables VI-1, VI-2, and VI-3 were used in the spreadsheet. Table VI-1 provides sound levels for unattenuated pile driving in water. Table VI-2 includes a 5 dB reduction sound levels for use of a bubble curtain in water. Table VI-3 includes a 10 dB reduction in sound levels for land-based pile driving.

The NMFS 2018 user spreadsheet permanent threshold shift (PTS) / onset of physical injury threshold values were adjusted to apply to fish rather than marine mammals: 187 dB for fish ≥ 2 grams, and 183 dB for fish less than 2 grams. The analysis used a peak threshold value of 206 dB. The propagation/transmission loss constant was assumed to be 15 per the practical spreading model. Parameters input into the spreadsheet are summarized in Table 2.4-8. Maximum number of days pile driving and total number of piles were not spreadsheet inputs, but are included in the table at NMFS's request. Pile driving activity will not exceed 12 hours per day (7 am to 7 pm); therefore, sound effects will not accumulate over multiple days of construction and will "reset" to zero each day.

Table 2.4-8. Pile driving activity details for the proposed bridge over the Tuolumne River

Pile Type/ Method	Maximum # of Piles per Day	Maximum # of Strikes per Pile	Total # of Piles[1]	Maximum # of Days[1, 2]	Peak (dB) at 10 meters	SEL (dB) at 10 meters	RMS (dB) at 10 meters[1]
Falsework bent piles and trestle piles in water – unattenuated (14-in H piles)[3]	4	30	13 (11 falsework, 2 trestle piles)	2 at maximum rate, 4 days total	208	177	187
Falsework bent piles and trestle piles in water – bubble curtain (14-in H piles)	4	30	13 (11 falsework, 2 trestle piles)	2 at maximum rate, 4 days total	203	172	182
Falsework bent piles on land (14-in H piles)	3	30	4	1 at maximum rate, 2 days total	198	167	177
South abutment piles on land (14-in H piles)	10	30	22	2 at maximum rate; 3 days total	198	167	177

[1]Not required in spreadsheet; provided for NMFS review

[2]Days other than those at maximum rates have lower rates of pile driving (fewer strikes/day). A lower maximum rate would result in increased days of pile driving

[3]Included for comparison to effect with bubble curtain; unattenuated in-water pile driving is not anticipated

The spreadsheet calculates how far adverse effects to fish extend from the pile driving location. Distances are calculated to the onset of physical injury ("PTS isopleth to threshold" in the spreadsheet) and to the peak pressure threshold. The maximum distances should be used as the effect extent, per guidance in the spreadsheet. The results of the analysis are summarized in Table 2.4-9, with maximum distance for each pile type in **bold**.

Table 2.4-9. Results of Hydroacoustic Effects Analysis

Pile Type/ Method	Distance to Threshold / PTS Isopleth		
	Peak dB: 206 dB	**Fish ≥ 2 g: 187 dB**	**Fish < 2 g: 183 dB**
Falsework bent piles and trestle piles in water – unattenuated (14-in H piles)	13.6 m / 44.6 feet	52.4 m / 172.0 feet	**96.9 m / 317.8 feet**
Falsework bent piles and trestle piles in water – bubble curtain (14-in H piles)	6.3 m / 20.7 feet	24.3 m / 79.8 feet	**45 m / 147.5 feet**
Falsework bent piles on land (14-in H piles)	2.9 m / 9.6 feet	9.3 m / 30.6 feet	**17.2 m / 56.5 feet**
South abutment piles on land; (14-in H piles)	2.9 m / 9.6 feet	20.8 m / 68.2 feet	**38.4 m / 126.1 feet**

Based on the sound level thresholds, fish weighing less than 2 grams are most sensitive to the hydroacoustic effects of pile driving. The distance at which those fish would be affected determines the maximum effect distance for each pile type/ installation method described below.

Pile driving at the north abutment will not adversely affect fish due to the distance (1,500 feet or 0.3 mile) of the abutment from the OHWM of the Tuolumne River.

Effect of loadstrike testing/proofing at the in-water falsework and work trestle piles will extend to a maximum distance of 147.5 feet with the use of a bubble curtain. The bubble curtain reduces the distances to thresholds by over 50% and the distance to the peak pressure threshold to less than 10 meters (32.8 feet).

Proofing land-based falsework pile will affect fish out to a maximum distance of 56.5 feet from the piles. The northern land-based pile bents are approximately 18, 38, 58, and 78 feet from the OHWM. Effects therefore extend 38.5 and 18.5 feet into the river for the piles 18 and 38 feet from the OHWM, respectively, and do not extend into the river channel for the piles 58 and 78 feet from the OHWM. The distance to the peak pressure threshold is less than 10 meters (32.8 feet) from the piles. The calculated distance to the threshold is 2.9 meters (9.6 feet) and does not extend into the river channel for any of the piles.

The maximum distance to sound effect thresholds from pile driving at the south abutments is 126.1 feet. Because the piles are 100 feet from the OHWM, effects to fish less than 2 grams extend approximately 26.1 feet into the Tuolumne River. Fish weighing 2 grams or more will not be adversely affected by south abutment pile driving as the distance to that threshold is 68.2 feet and does not reach the water. The distance to the peak pressure threshold is less than 10 meters (32.8 feet) from the piles and does not extend into the river channel.

The in-water work period for bridge construction will be restricted to the least sensitive diurnal, seasonal, and meteorological periods for CCV steelhead, assumed to be July 1 through October 31. Juvenile steelhead could be present in the Action Area any time of year as they require one or more years of freshwater rearing.

Essential Fish Habitat for Chinook Salmon (*Oncorhynchus tshawytscha*): The Project area is located in the Upper Tuolumne hydrologic unit (18040009), which is designated as EFH for Chinook salmon. The river bottom is silty and muddy, and lacks areas of gravel within the Project area. Tuolumne River within the Project area does not contain appropriate habitat constituents of Chinook salmon eggs or alevins EFH. The river is perennial, and does provide Chinook salmon juvenile rearing or adult holding habitat.

The Project may result in up to 0.28 acres of temporary impacts and 0.02 acre of permanent impacts to the Tuolumne River, designated as Chinook salmon EFH. The temporary impacts consist of the installation of pile bents that support the temporary work trestle. The piles would be likely be driven into place with an impact hammer. The permanent impacts consist of bridge columns and RSP within the OHWM of the river. Upon completion of the bridge, the river and riparian corridor would be restored to original conditions. The permanent impacts would not significantly reduce the habitat quality of Chinook salmon EFH. The quantity of impacts to the habitat are minimal compared to the available surrounding habitat. With implementation of avoidance and minimization measures, along with proposed compensatory mitigation, the Project may adversely affect EFH for Chinook salmon.

Birds

Tricolored Blackbird (*Agelaius tricolor*): No tricolored blackbirds were observed in the Project area during the biological surveys. Suitable nest habitat is not present in the Project area. The agricultural fields in the Project area could provide foraging habitat for tricolored blackbirds, if suitable nesting habitat occurs nearby along the river, outside of the Project area. It is unlikely that the project would affect this species.

Swainson's Hawk (*Buteo swainsoni*): No Swainson's hawks were observed in the Project area during the surveys. Utility poles and riparian trees in the Project area provide potential nesting habitat for Swainson's hawk. Agriculture fields in the Project area provide potential foraging habitat for Swainson's hawk. Orchards do not provide foraging habitat for Swainson's hawk Swainson's hawk. Placement of the new road segment would permanently impact approximately 13.94 acre of agriculture fields (Table 2.4-1) in the Project area. Temporary impacts to approximately 133.29 acre of potential foraging habitat (Agriculture fields, Table 2.4-1) would result from project staging/ lay down, access, and construction. Temporarily disturbed areas will be restored following construction. With implementation of BIO-7 the project will not adversely affect this species.

2.4.5.2.2 No-Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly impact threatened and endangered species.

2.4.5.3 Avoidance, Minimization, and/or Mitigation Measures

2.4.5.3.1 Plants

Delta coyote-thistle (*Eryngium racemosum*): Implementation of measure BIO-4 would reduce project impacts to Delta coyote-thistle.

2.4.5.3.2 Invertebrates

Vernal pool Fairy shrimp (VPFS; *Branchinecta lynchi*): Implementation of measure BIO-10 would reduce project impacts to VPFS.

Measure BIO-10 (Vernal pool Fairy shrimp)

- For every acre of habitat directly affected, at least two vernal pool credits will be dedicated within a USFWS-approved ecosystem preservation bank, and at least one vernal pool creation credit will be dedicated within a USFWS-approved habitat mitigation bank. Permanent impacts to VPFS habitat shall be mitigated by purchase of 0.34 vernal pool preservation credits and 0.17 vernal pool creation credits, from a USFWS-approved bank.

Vernal pool tadpole shrimp (VPTS; *Lepidurus packardi*): Implementation of measure BIO-10 would reduce project impacts to VPFS.

Valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*): Implementation of measure BIO-11 would reduce project impacts to VELB.

Measure BIO-11 (Valley elderberry longhorn beetle, VELB)

- To compensate for impacts to VELB, the 2017 USFWS Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (VELB Framework) recommends a compensation ratio of 3:1 when proposing habitat-level compensation for riparian habitats, and a compensation ratio of 1:1 for non-riparian habitat. The purchase of 64 VELB credits from a USFWS-approved bank is proposed as compensation for impacts to 0.83 acre of riparian habitat and 0.10 acre of non-riparian habitat (see table below).

  Summary Table of VELB Mitigation Compensation

Habitat Type	Compensation Ratio [1]	Total Acres of Disturbance	Compensation Acreage	VELB Credit Compensation [2]
Riparian	3:1	0.83	2.49	61 credits
Non-Riparian	1:1	0.10	0.10	3

[1] acre(s) of credits: acre(s) of disturbance. Compensation ratio obtained from Table 1 of the 2017 VELB Framework.

[2] Per the 2017 VELB Framework, a single credit equals 1,800 square feet or 0.041 acres. The VELB Credit Compensation was calculated by dividing the Compensation Acreage by the number of acres in a VELB Credit (0.041), and rounding up.

[3] Non-riparian habitat is the acres of elderberry shrub canopy outside of the riparian habitat.

- Prior to Project construction a qualified biologist will conduct a filed survey to confirm the acreage of VELB habitat affected by the Project. If the acreage of VELB habitat affected by the Project has changed USFWS will be notified to determine if reinitiation of Section 7 Endangered Species Act is required.
- All areas to be avoided during construction activities will be fenced with temporary orange construction fence and/or flagged as close to construction limits as feasible.
- Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) may need an avoidance area of at least 20 feet from the drip-line, depending on the type of activity.
- A qualified biologist will provide training for all contractors, work crews, and any onsite personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging elderberry shrubs, and possible penalties for noncompliance.
- A qualified biologist will monitor the work area at project appropriate intervals to assure that all avoidance and minimization measures are implemented.
- As much as feasible, all activities that could occur within 165 feet of an elderberry shrub, will be conducted outside of the flight season of the VELB (March - July).
- Trimming may remove or destroy VELB eggs and/or larvae and may reduce the health and vigor of the elderberry shrub. In order to avoid and minimize adverse effects to VELB when trimming, trimming will occur between November and February and will avoid the removal of any branches or stems that are ≥ 1 inch in diameter. Measures to address regular and/or large scale maintenance (trimming) should be established in consultation with the USFWS.
- Herbicides will not be used within the drip-line of the shrub. Insecticides will not be used within 98 feet of an elderberry shrub.
- Mechanical weed removal within the drip-line of the shrub will be limited to the season when adult VELB are not active (August - February) and will avoid damaging the elderberry.
- Erosion control will be implemented and the affected area will be re-vegetated with appropriate native plants, according to Appendix F of the Project Natural Environment Study (NES).

2.4.5.3.3 Fish

Steelhead – California Central Valley (CCV) DPS (Oncorhynchus mykiss): Implementation of measure BIO-12 would reduce project impacts to CCV Steelhead DPS. Implementation of BIO-1 (Riparian Forest) and BIO-2 (Tuolumne River) would also reduce potential impacts.

Measure BIO-12 (Steelhead – California Central Valley)

- Impacts to CCV steelhead shall be mitigated by purchase of restored or preserved Shaded Riverine Aquatic habitat mitigation credits from a NMFS-approved mitigation bank. The type of mitigation credits to be purchased will reflect the type of habitat being impacted. Shaded riverine aquatic (SRA) habitat, with shallow water habitat, will be mitigated at a 3:1 ratio for permanent impacts (0.02 acre x 3 = 0.06 credits) and a 1:1

ratio for temporary impacts (0.20 credits). The remaining temporary impacts (0.08 acre) are to open channel, and will be mitigated at a 1:1 ratio (0.08 credits). A total of 0.34 restored or preserved Shaded Riverine Aquatic habitat credit will be purchased from a NMFS-approved bank (such as the Cosumnes Floodplain Mitigation Bank). The credit purchased must be approved by NMFS to fully mitigate impacts to California Central Valley (CCV) Steelhead DPS, CCV Steelhead Critical Habitat, and EFH for the CCV Steelhead DPS.

- Measures shall be taken by the County to minimize the potential underwater sound impacts related to pile driving on to listed species.

    - A wood block, bubble curtain, or similar protection will be installed (prior to the driving of piles) to further reduce the effects of noise and vibration to fish associated with pile-driving activities if it is determined that such activities must occur in the water.

    - If sound levels exceed those indicated in the surrogate (as described in section 2.9.1 of the 8 January 2021 approved NMFS Biological Opinion), pile driving shall cease and Caltrans shall call NMFS to discuss additional measures for reducing the levels.

    - Pile-driving activity shall occur during daylight hours only, to ensure listed fish species are allowed upstream and downstream passage at night when they typically migrate (the periods from 10 pm to 8 am are typical periods for the migration of most of the listed species in their juvenile and adult life stages).

    - No simultaneous pile driving shall occur. If piles are driven with multiple impact hammers in the same day, pile strikes occurring at the same time shall be avoided in order to avoid potential overlapping sound in the river amplifying sound impacts to fish greater than sound levels described in section 1.3.4 of the 8 January 2021 approved NMFS Biological Opinion.

    - In-water pile-driving activities shall be restricted to July 1 to October 31. No in-water pile-driving activity is to extend past this date, as it may pose a significant disturbance to anadromous fish migration through the Tuolumne River.

- As applicable, electrofishing operations conducted during the fish rescue operations, shall be conducted according to the NMFS (2000) Guidelines for Electrofishing, and all electrofishing operators shall have proper training.

    - All electrofishing activity shall be conducted in accordance to the NMFS (2000) Guidelines for Electrofishing.

    - Electrofishing operator must have appropriate training and experience with electrofishing techniques. Operators should be familiar with electric circuit and field theory, safety, and fish injury awareness and minimization. Operator should have at least 50 hours of electrofishing experience in the field using similar equipment.

- Electrofishing equipment must be in good working condition and operators should go through the manufacturer's preseason checks, adhere to all provisions, and record maintenance work in a logbook. Each electrofishing session must start with all settings (voltage, pulse width, and pulse rate) set to the minimums needed to capture fish. These settings should be gradually increased only to the point where fish are immobilized and captured.

- If any listed salmonids are captured during electrofishing, the biologist shall immediately return the fish to the water in a manner that will not induce further harm (i.e., not to be susceptible to the electric current for a second time). This can be accomplished by temporarily stopping electrofishing, or returning the fish to the water downstream of the activity, providing enough distance from the anodes that the fish would not be shocked again.

- Measures shall be taken by the County to reduce mortality of listed species requiring capture/relocation in association with dewatering activities.

  - During dewatering activities, a qualified fish biologist shall be present on site to make observations, and capture/relocate fish if they become entrapped in the dewatered area.

  - Only fish biologists trained in salmonid capture and relocation shall remove and relocate fish during dewatering activities.

  - Any captured listed fish species shall be immediately relocated back into the Tuolumne River downstream of the construction activity.

- At least 90 days prior to groundbreaking activities, the County will provide to NMFS for review and approval a report describing how impacts of the incidental take on listed species in the action area will be monitored and documented. These will include how acoustic noise generated during the impact hammer activity will be measured to ensure the surrogate for noise impacts will not be exceeded.

- County shall notify NMFS of any unauthorized activities (regardless of who conducted said activities) or emergencies resulting in any adverse impacts not described in the 8 January 2021 approved NMFS Biological Opinion. This notification shall be made within 48 hours or sooner, if possible.

- Within 90 days of project completion, County is required to submit a report. The report shall include a summary description of projected and actual start dates, progress, and completion of the Project and verify that take was not exceeded, confirmation that the mitigation bank credits have been purchased, all avoidance and minimization measures were followed, area of any on-site revegetation, and observation of listed fish species. Updates and reports required by these terms and conditions shall be submitted by December 31 of the construction year:

  - Electronically to the NMFS CCVO at the following e-mail address: ccvo.consultations@noaa.gov

- And mailed to:

  Cathy Marcinkevage
  Assistant Regional Administrator
  Central Valley Office
  National Marine Fisheries Service
  650 Capitol Mall, Suite 5-100
  Sacramento CA 95814

- Any observations of listed fish species mortalities or abnormal behavior shall immediately be reported to NMFS per the instructions in Term and Condition 5.a. within 24 hours. This information shall include species observed, life history stage, location (including GPS coordinates if available), number of fish observed, time of day, as well as any other relevant details that are available. If possible, mortalities shall be collected, frozen, and individually labeled with appropriate information. Any dead specimen(s) should be placed in a cooler with ice and either held for pick up by NMFS personnel or an individual designated by NMFS to do so, or sent to:

  NMFS Southwest Fisheries Science Center
  Fisheries Ecology Division
  110 Shaffer Road
  Santa Cruz, California 95060

- Equipment will be inspected on a daily basis for leaks and completely cleaned of any external petroleum products, hydraulic fluid, coolants, and other deleterious materials prior to operating the equipment.

- Maintenance and construction activities (other than pile driving which is addressed above) will be avoided at night to the extent practicable. When night work cannot be avoided, disturbance of sensitive species and managed habitats (including EFH) will be avoided and minimized by restricting substantial use of temporary lighting to the least sensitive seasonal and meteorological windows. Lights on work areas will be shielded and focused to minimize fugitive lighting.

- An underslung work platform, temporary work trestle or similar structure will be installed to keep bridge debris and construction, maintenance, and repair materials from falling into the river during construction.

- Temporary sediment basins, if installed, will be cleaned of sediment and the site restored to pre-construction contours (elevations, profile, and gradient) and function post-construction.

- Excavated material will not be stored or stockpiled in the channel. Any excavated material that will not be placed back in the channel or on the bank after construction will be end-hauled to an approved disposal site.

- Gravel and large woody debris (LWD) excavated from the channel that is temporarily stockpiled for reuse in the channel will be stored in a manner that prevents mixing with river flows.

- Cofferdams or other diversions will affect no more of the river channel than is necessary to support completion of the construction activity. Immediately upon completion of in-channel work, temporary fills, cofferdams, diversions, and other in-channel structures that will not remain in the river (i.e., materials other than clean, spawning-sized gravel) will be removed in a manner that minimizes disturbance to the aquatic environment.

- If pumps are used to temporarily divert or dewater the Tuolumne River to facilitate construction, an acceptable fish screen must be used to prevent entrainment or impingement of small fish. Potential contact between fish and pump will be minimized and/or avoided by constructing an open basin prior to commencing dewatering. The open basin will be inspected for fish, which will be salvaged and placed in the active flow of Tuolumne River adjacent to the work zone by a qualified biologist.

- The temporary diversion structure will be designed so that fish passage is maintained up and down stream of the Project area. The diversion will not create an impassible barrier. The diversion would allow flows to pass through the channel under the bridge while maintaining water quality in the river. An open channel diversion will be used during construction to minimize impacts to CCV steelhead. The contractor will prepare a creek diversion and dewatering plan that complies with any applicable permit conditions.

- All structures and imported materials placed in the river channel or on the banks during construction that are not designed to withstand high flows will be removed before such flows occur.

- Temporary fills, cofferdams, and diversions that are left in the river channel will be composed of washed, rounded, spawning-sized gravel between 0.4 to 4 inches in diameter; gravel in contact with flowing water will be left in place, modified (i.e., manually spread out using had tools if necessary) to ensure adequate passage for all life stages of fish present in the Project area, and then allowed to disperse naturally by high winter flows; materials placed above the OHWM must be clean washed rock or contained to prevent material conveyance to the river or mixing with clean gravel.

- The contractor will monitor turbidity levels in the river during construction and implement a plan that avoids unacceptable sedimentation and turbidity.

- Water pumped from areas isolated from surface water to allow construction to occur in the dry will be discharged to an upland area providing overland flow and infiltration before returning to the river. Upland areas may include sediment basins of sufficient size to allow infiltration rather than overflow or adjacent dry gravel/sand bars if the water is clean and no visible plume of sediment is created downstream of the discharge. Other measures may be used to settle and filter water such as Baker tanks.

- Drilling will be conducted in dry river channel areas, to the extent practicable. If drilling must occur where water is present, the work area will be isolated from live water prior to

work. When geotechnical drilling takes place within the river channel, including gravel beds and bars, drilling mud will be bentonite without additives; initial drilling through gravel will be accomplished using clean water as a lubricant; after contact with bedrock or consolidated material, drilling mud (i.e., bentonite clay) may be used. All drilling fluids and materials will be self-contained and removed from the site after use; drilling will be conducted inside a casing so that all spoils are recoverable in a collection structure.

- Stream width, depth, velocity, and slope that provide upstream and downstream passage of adult and juvenile fish will be preserved according to current NMFS and CDFW guidelines and criteria or as developed in cooperation with NMFS and CDFW to accommodate site-specific conditions.

- Flow through new and replacement structures must meet the velocity depth, and other passage criteria for salmonid streams as described by the current NMFS and CDFW guidelines or as developed in cooperation with NMFS and CDFW to accommodate site-specific conditions.

- Rock slope protection (RSP), sheet piles, and other erosion control materials will be pre-washed to remove sediment and/or contaminants. Temporary material storage piles (e.g., RSP) will not be placed in the 100-year floodplain during the rainy season (October 15 through May 31), unless material can be relocated within 12 hours before the onset of a storm.

- Trees as identified in any special contract provisions or as directed by the Project Engineer will be preserved. Hazard trees greater than 24 inches in diameter at breast height (DBH) will be removed only under the supervision of the Project Biologist. Trees will be felled in such a manner as not to injure standing trees and other plants to the extent practicable.

- Where vegetation removal is temporary to support construction activities, native species will be re-established that are adapted to the project location and that contribute to a diverse community of woody and herbaceous plants. Disturbance and removal of aquatic vegetation will be minimized. The limits of disturbance will be identified; native vegetation, river channel substrate, and LWD disturbed outside these limits should be replaced if damaged. The minimum amount of wood, sediment and gravel, and other natural debris will be removed using hand tools, where feasible, only as necessary to maintain and protect culvert and bridge function, ensure suitable fish passage conditions, and minimize disturbance of the riverbed.

- Soil compaction will be minimized by using equipment that can reach over sensitive areas and that minimizes the pressure exerted on the ground. Where soil compaction is unintended, compacted soils will be loosened after heavy construction activities are complete.

- LWD subject to damage or removal will be retained and replaced on site after project completion as long as such action would not jeopardize infrastructure or private property or create a liability. LWD not replaced on-site will be stored or offered to other entities for use in other mitigation/restoration projects where feasible.

- Vegetation disturbance will be minimized by locating temporary work areas to avoid patches of native aquatic vegetation, substantial LWD, and spawning gravel. Where vegetation removal is temporary to support construction activities, native species will be re-established that are specific to the project location and that comprise a diverse community of aquatic plants.

- Where river bed material is removed temporarily to facilitate construction, it will be stored adjacent to the site, then placed back in the channel post-construction at approximately pre-project depth and gradient.

- Existing roadways will be used for temporary access roads whenever reasonable and safe. The number of access and egress points and total area affected by vehicle operation will be minimized; disturbed areas will be located to reduce damage to existing native aquatic vegetation, substantial large woody debris, and spawning gravel.

- Modified or disturbed portions of rivers, banks, and riparian areas will be restored as nearly as possible to natural and stable contours (elevations, profile, and gradient). At project completion, the riverbank toe will not extend farther into the active channel than the existing riverbank toe location.

- The use of RSP at bridge abutments will be limited to the minimum necessary to protect the abutments under flood conditions.

- Bank stabilization will incorporate bioengineering solutions consistent with site-specific engineering requirements, when feasible. Where RSP is necessary, native riparian vegetation and/or LWD may be incorporated into the RSP.

- Stanislaus County shall retain a qualified, NMFS-approved biologist with expertise in the areas of anadromous salmonid biology, including handling, collecting, and relocating salmonids, salmonid/habitat relationships, and biological monitoring of salmonids. Stanislaus County shall ensure that all biologists working on the project will be qualified to conduct fish collections in a manner which minimizes potential risks to salmonids.

- If individuals of sensitive aquatic species may be present and subject to potential injury or mortality from construction activities, a qualified biologist will conduct a preconstruction visual survey (i.e., bank observations).

- The NMFS-approved biologist will be present during in-water activities, including installation and removal of the diversion structure and dewatering activities. If steelhead are observed, construction will be halted until they move out of the construction zone. If they remain in the construction zone for an extended period, NMFS will be contacted for further guidance.

- The NMFS-approved biologist will continuously monitor for the purpose of removing and relocating any listed species that were not detected or could not be removed and relocated prior to construction. The project biologist will be present at the work site until all sensitive species to be removed from a project site have been removed and relocated.

- When sensitive aquatic species are present in the Project area and it is determined that they could be injured or killed by construction activities, a NMFS-approved biologist will identify appropriate methods for capture, handling, exclusion, and relocation of individuals or resources that could be affected. Where such resources cannot be feasibly captured, handled, excluded, or relocated (e.g., salmonid redd), actions that could injure or kill individual organisms or harm resources will be avoided or delayed until the species leaves the affected area or the organism reaches a stage that can be captured, handled, excluded, or relocated.

- The NMFS-approved biologist will conduct, monitor, and supervise all capture, handling, exclusion, and relocation activities; ensure that sufficient personnel are available for safe and efficient collection of listed species; and ensure that proper training of personnel has been conducted in identification and safe capture and handling of sensitive aquatic species.

- Individual organisms will be relocated the shortest distance possible to habitat unaffected by construction activities. Within occupied habitat, capture, handling, exclusion, and relocation activities will be completed no earlier than 48 hours before construction begins to minimize the probability that listed species will recolonize the affected areas.

- Within temporarily drained river channel areas, salvage activities will be initiated before or at the same time as river area draining and completed within a time frame necessary to avoid injury and mortality of sensitive aquatic species.

- The NMFS-approved biologist will maintain detailed records of the species, numbers, life stages, and size classes of listed species observed, collected, relocated, injured, and killed, as well as recording the date and time of each activity or observation.

- Before construction activities begin, the project environmental coordinator or NMFS-approved biologist will discuss the implementation of the required BMPs with the maintenance crew or construction resident engineer and contractor, and identify and document environmentally sensitive areas and potential occurrence of listed species.

- Stanislaus County will designate a biological monitor to monitor on-site compliance with all project BMPs and any unanticipated effects on listed species. Non-compliance with BMPs and unanticipated effects on listed species will be reported to the resident engineer or maintenance supervisor immediately. When non-compliance is reported, the resident engineer or maintenance supervisor will implement corrective actions immediately to meet all BMPs; where unanticipated effects on listed species cannot be immediately resolved, the resident engineer or maintenance supervisor will stop work that is causing the unanticipated effect until the unanticipated effects are resolved. The biological monitor should be approved by NMFS.

- A NMFS-approved biologist will train project staff on-site regarding habitat sensitivity, identification of CCV steelhead, and required practices before the start of construction. The training shall include the general measures that are being implemented to conserve CCV steelhead as they relate to the project, penalties for noncompliance, and

boundaries of the construction area. A fact sheet or other supporting materials containing this information will be prepared and distributed. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures.

- A NMFS-approved biological monitor will be designated for the project and will visit the site a minimum of once per week to ensure that ESA fencing is intact and that activities are being conducted in accordance with the agency conditions of approval.

- A notice that fish rescue and relocation will be conducted shall be submitted to CDFW and NMFS at least 10 days prior to dewatering along with the names of the biologist(s) that will be conducting the fish rescue and relocation. All fish exclusion and relocation activities will adhere to accepted NMFS protocols.

Essential Fish Habitat for Chinook Salmon (*Oncorhynchus tshawytscha*): Implementation of measures BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), and BIO-12 (Steelhead – California Central Valley) would reduce project impacts to Chinook salmon EFH.

2.4.5.3.4 Birds

Tricolored Blackbird (*Agelaius tricolor*): Implementation of measure BIO-7 would also reduce potential project impacts to this species.

Swainson's Hawk (*Buteo swainsoni*): Implementation of measure BIO-7 would also reduce potential project impacts to this species.

2.4.6 Invasive species

2.4.6.1 Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State's invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

2.4.6.2 Affected Environment

Primary information sources for this section include the Project's Natural Environment Study (NES, March 2020).

There are 22 invasive plant species that occur in the Project area. Two of the invasive plants in the Project area are rated as "High" by the California Invasive Plant Council (Cal-IPC) relative to their ecological impact, invasive potential, and ecological distribution: yellow star-thistle (*Centaurea solstitialis*) and giant reed (*Arundo donax*).

Yellow star-thistle is a deep-taprooted winter annual or short-lived perennial that spreads by seed. Human activities are the primary mechanisms for the long-distance movement of yellow-star thistle seed. Once at a new location, seed is transported in lesser amounts and over short to medium distances by animals and humans. Seed heads readily adhere to clothing, hair, and fur. Plants are highly competitive and typically develop dense, impenetrable stands that displace desirable vegetation in natural areas, rangelands, roadsides, other places. Yellow star-thistle is considered one of the most serious rangeland weeds in the western United States. Yellow star-thistle interferes with grazing and lowers yield and forage quality of rangelands. It also reduces land value and limits access to recreational areas. Yellow star-thistle was observed throughout the uplands within the Project area.

Giant reed is a tall, perennial, reed-like grass that grows up to 24 feet tall, with erect semi-woody canes and dense, plume-like inflorescences. This species colonizes riparian corridors, floodplains, and ditches throughout the state. Giant reed develops dense stands that displace native vegetation, diminish wildlife habitat, increase flooding and siltation in natural areas, and are highly flammable, increasing susceptibility of riparian corridors to fire. Giant reed is very commonly cultivated for ornamental use. It reproduces vegetatively through rhizomes and fragments of rhizome and stem. Rhizomes must be removed or killed to eradicate infestations. Manual removal of small populations may prevent large infestations from developing. Systemic herbicide treatment of mature plants in late summer to early fall is the most effective. Cutting stems and treating the stumps with systemic herbicide is effective from March to October. Giant reed was found in the Project area in a small stand on the north shore of the Tuolumne River.

2.4.6.3 Environmental Consequences

2.4.6.3.1 Build Alternative

The invasive plant species rated “High” that are found in the Project area are common in the Central Valley. The limited scope of this Project precludes effective eradication of these invasive species of the Project area and surrounding areas. By revegetating disturbed areas with native species, and with the avoidance and minimization efforts, the Project would not contribute to the spread of invasive weeds.

2.4.6.3.2 No-Build Alternative

The No-Build Alternative would not construct any of the proposed improvements and therefore would not directly or indirectly impact invasive species.

2.4.6.4 Avoidance, Minimization, and-or Mitigation

Implementation of measure BIO-13 would help reduce the potential spread of invasive plant species

Measure BIO-13 (Invasive Plants)

- To reduce the spread of invasive plant species, all mud and debris will be washed off construction equipment prior to entering the site.

- All disturbed areas will be will be restored to pre-construction contours and re-vegetated with appropriate native plants, according to Appendix F of the Project Natural Environment Study (NES).

2.5 Cumulative Impacts

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR) Section 1508.7.

The Departments' *Standard Environmental Reference (SER) 2005 Guidance for Preparers of Cumulative Impact Analysis* identifies the following steps to serve as guidelines for identifying and assessing cumulative impacts:

- Identify resources to be analyzed
- Define the Study Area for each resource (i.e., Resource Study Area [RSA])
- Describe the current health and historical context for each resource
- Identify direct and indirect impacts of the proposed project
- Identify other reasonably foreseeable actions that affect each resource
- Assess potential cumulative impacts
- Report results
- Assess the need for mitigation

Identify resources to be analyzed: Chapter 2 (Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures) of this document has evaluated project-specific impacts to human, physical, and biological resources within and around the project study area. Based on the evaluation, the following resources may be cumulatively affected by the project:

- Farmland Resources

Per the Departments' guidance, a cumulative impact analysis assesses only the net impact (i.e. impact minus avoidance, minimization, and/or mitigation) on a resource. If there is no impact on a resource or if the impact is fully offset by avoidance, minimization, and/or mitigation measures, there would be no contribution to cumulative impacts. Those resources for which cumulative effects are not anticipated or for which the impacts were already analyzed in a cumulative context (e.g., traffic, air quality, and noise) are briefly discussed below.

Land Use: The improvements associated with the Build Alternative are consistent with local and regional goals to improve traffic operations and to reduce congestion in the area. Land use compatibility conflicts would not occur where existing land uses would be used for transportation use. Therefore, adverse cumulative impacts related to land use would not occur.

Consistency with State, Regional, and Local Plans: The Project is consistent with the General Plan of Stanislaus County as well as the City of Ceres and City of Modesto. The proposed project would not contribute to cumulative adverse impacts.

Park and Recreational Facilities: The proposed Project would not have permanent effects on County or City Park operations. Construction of the Project may require the installation of work trestles in the Tuolumne River or construction of a temporary bypass channel. These project components could impact river usage by boaters. Implementation of REC-1 would include installation of a protected channel corridor through which boaters could safely pass under or past the work area. The proposed Project would not contribute to cumulative adverse impacts to park and recreational facilities.

Growth: The Build Alternative would improve existing and future traffic operations, reduce congestion, and accommodate existing and future planned growth that would occur with or without the project. The Build Alternative Phase 1 and Phase 2 do not induce growth or remove obstacles to growth in the area; therefore, it would not contribute to cumulative adverse impacts related to growth.

Community Impacts: The Project would not contribute to cumulative adverse impacts related to community impacts because:

- The Project does not have any impacts associated with Community Character and Cohesion.

- The Project does not require any residential, commercial, or industrial relocations.

- The Project would not cause disproportionately high and adverse effects on any minority or low-income populations as per EO 12898 regarding environmental justice.

Utilities/ Emergency Services: No permanent adverse impacts to utilities or emergency services are anticipated. Once complete the Project would provide an additional crossing of the Tuolumne River. This would benefit emergency service providers providing an addition river crossing to use if traffic or other conditions dictate. The Project would not contribute to cumulative adverse impacts related to utilities and emergency services.

Traffic and Transportation/ Pedestrian and Bicycle Facilities: For over three decades, Stanislaus County and the Cities of Modesto and Ceres have planned for closing the gap between Faith Home Road and Garner Road and bridging the Tuolumne River. The proposed Project would improve circulation between existing SR 132 and SR 99. The Build Alternative would reduce VMT compared to the No Build Alternative. The measures presented in section 2.1.8. are either currently included in the 2018 RTP/SCS or are recommended for inclusion for the next RTP/SCS project list. The RTP is the region's blueprint for future transportation improvements and investments based on specific transportation goals and objectives defined by StanCOG, the public, and elected officials. The RTP is a 25-year planning tool prepared by the Metropolitan Planning Organization (MPO) to encourage and promote the safe and efficient management, operation and development of a regional intermodal transportation system that would serve the mobility needs of goods and people. Overall, the Project would improve circulation between existing SR 132 and SR 99, reduce congestion, and reduce VMT compared to the No Build Alternative. The Build Alternative would not contribute to cumulative adverse impacts to traffic/transportation.

Visual/ Aesthetics: The Project would not substantially alter the current visual character of the area from existing driver vantage points. Therefore, the visual character of the proposed project would be compatible with the existing visual character of the corridor. Review of the project site and plans indicate that the proposed project would not result in substantial adverse impacts to the visual environment as seen by the general public from existing travel way vantage points. Furthermore, this review indicates that the project would not adversely affect any "Designated Scenic Resource" as defined by CEQA statutes or guidelines, or by a Department policy. The Project would not contribute to cumulative adverse impacts related to visual and aesthetic resources.

Cultural Resources: Construction of the Build Alternatives would not directly or indirectly impact known cultural resources or cultural resources on or eligible for listing on the National Register of Historic Places and would not contribute to cumulative adverse impacts related to cultural resources.

Hydrology and Floodplain: Potential short- term impacts during the construction of the new bridge to the natural and beneficial floodplain values include the following: 1) loss of vegetation during construction activity; and 2) temporary disturbance of wildlife and aquatic habitat. Potential permanent impacts include modification of vegetation and

wildlife/aquatic habitat at the new bridge structure, approaches, and piers. Implementation of Measure BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), BIO-3 (Seasonal Wetland), BIO-10 (Valley elderberry longhorn beetle), and BIO-11 (Steelhead – California Central Valley) would reduce potential temporary and permanent impacts to the natural and beneficial floodplain values present in the Project area. Implementation of floodplain of measure HYDRO-1 would reduce potential effects associated with the increase in the BFE. The Project would not contribute to cumulative adverse impacts related to hydrology and floodplain resources.

Water Quality and Storm Water Runoff: As described in Section 2.2.2 (Water Quality and Storm Water Runoff), the Project creates or replaces more than 5,000 sq feet of impervious area and is required to implement post-construction stormwater controls for new impervious surfaces under the MS4 Permit. Hydromodification measures would be required to offset the difference between the pre- and post-construction peak flow runoff rates and volumes. There is also the potential for construction-related pollutants to spill or to leak, or to be transported via storm runoff into drainages adjacent to the study area and into downstream receiving waters during construction. Implementation of measures WQ-1 (Hydromodification), BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), BIO-3 (Seasonal Wetland), BIO-10 (Valley elderberry longhorn beetle), and BIO-11 (Steelhead – California Central Valley) would reduce potential temporary and permanent impacts to water quality. The Project is in an urbanized area, the application of regulatory requirements and implementation of the measures listed above to the Build Alternative and resultant limited impacts would not contribute to cumulative adverse impacts to surface water quality.

Geology/Soils/Seismic/Topography: The potential impacts of Build Alternatives, Phase 1 and Phase 2 related to geologic conditions and soils as discussed in Section 2.2.3 (Geology/Soils/Seismic/Topography) would be avoided or minimized based on site-specific geotechnical design features, as described in measure GEO-1 (Liquefaction and Seismic Settlement). As a result, Build Alternatives, Phase 1 and Phase 2 would not contribute to cumulative adverse impacts related to geology, soils, seismic, and topography.

Paleontology: No fossil resources were observed during the survey of the Project impact area. Fossils may be recovered where vertical impacts exceed 3 feet in Pleistocene deposits or 8 feet in Holocene deposits. Also, the excavation for the borrow area is highly sensitive for fossils. Measure PALEO-1 (Paleontological Mitigation Plan) would be implemented to reduce potential effects paleontological resources. As a result, Build Alternatives, Phase 1 and Phase 2 would not contribute to cumulative adverse impacts related to paleontology.

Hazardous Waste/ Materials: Results of the PSI-ADL Study indicate that the soil in the Project area contains detectable concentrations of metals (arsenic and lead), pesticides, PAHs, and SVOCs, however, the concentrations are below the threshold limits and the soil can be pre-classified as Non-Hazardous. Worker safety measures should follow Cal/OSHA regulations to limit exposure and hazards to construction workers during soil disturbance for the bridge construction. LBP was detected in the yellow traffic striping sample LBP-3 on the Ceres Canal Bridge, that would need to be disposed of at a Class I

Landfill. Implementation of the measure HAZ-1 (Worker Safety, Waste Handling and Disposal) would reduce potential impacts to workers and public health and safety. As a result, Build Alternatives, Phase 1 and Phase 2 would not contribute to cumulative adverse impacts related to hazardous waste/ materials.

Air Quality: The proposed Project is located in an attainment/maintenance area for CO and PM10 and a nonattainment area for PM2.5 and Ozone. The results of the air quality analysis demonstrate that the proposed Project's short-term and long-term air quality impacts would not:

- Worsen air quality in the project area.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Expose sensitive receptors to substantial pollutant concentrations.

Further, the proposed Project alternatives would not generate any localized CO Hot-Spots in the project area, which demonstrates that the proposed Project would meet project-level conformity. Regional transportation conformity requirements are also met for the proposed Project as it is included in the StanCOG financially constrained 2021 FTIP.

With implementation of measure AQ-1 (Construction Emissions) identified in Section 2.2.6, construction-related emissions would not be substantial and are unlikely to contribute to cumulative air quality impacts. Construction activities related to the proposed project would last for less than five years at one general location; therefore, construction-related emissions do not need to be included in regional and project-level conformity analysis. As described in Section 2.2.6, the proposed project was determined not to be a POAQC by the Transportation Conformity Working Group. Build Alternatives, Phase 1 and Phase 2 would not contribute to cumulative adverse impacts related to air quality.

Noise: Although it is anticipated that multiple projects may be constructed during the same timeframe as the proposed project, it is not anticipated that temporary noise impacts would contribute to a cumulative effect within the Study Area. During construction of the Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Implementation of the Departments' Standard Specification 14-8.02, "Noise Control" would minimize the temporary construction-generated noise.

An increase of greater than 12 dB is predicted at receiver R8 for both the two-lane and four-lane alternatives. However, this receiver is not a residential use (it has been converted to office space) and does not include any areas of significant outdoor activity. For both Phase 1 and Phase 2, noise levels at all sensitive receivers remain below their respective NAC Activity Category standard. The proposed Project would not cause a noise impact to the surrounding area and therefore would contribute to a cumulative effect related to noise.

Biological Environment: Although the proposed Project would have potential impacts on biological resources, including listed and other special-status species, riparian habitat and the Tuolumne River, such impacts would be addressed through the various avoidance, minimization, and mitigation measures included in the Biological Environment sections of this document, in addition to permit conditions requiring habitat and wetlands restoration through compensatory mitigation. Such permits would be obtained during prior to construction. As a result, the proposed project is not anticipated to produce direct or indirect significant impacts to biological resources and thus would not contribute to a cumulative effect on such resources.

Define the Study Area for Each Resource

Farmland Resources: The resource study area (RSA) for farmlands is the unincorporated portion of Stanislaus County.

Current Health and Historical Context

Farmland Resources: Agriculture is the leading industry in Stanislaus County, generating an annual gross value in excess of a billion dollars into the local economy. Stanislaus County consistently ranks among the top ten agricultural counties in the state and plays a major role in agriculture at the national level, based on market value of agricultural product sold (Stanislaus County 2016a). Agricultural land use in Stanislaus County includes approximately 249,967 acre of Prime Farmland, 33,172 acre of Farmland of Statewide Importance, 116,210 acre of Unique Farmland, and 26,029 acre of Farmland of Local Importance.

In 1973, Stanislaus County adopted a new General Plan concept called urban transition. The purpose of the urban transition designation is to ensure that land remains in agricultural usage until urban development consistent with a city's (or unincorporated community's) general plan designation is approved. In the Project area assessor's parcel numbers (APN) 039-011-022 and 018-061-017 are zoned for agriculture and are designated as urban transition lands due to their proximity to the Cities of Modesto and Ceres.

In addition to the agricultural goals and policies discussed in Section 2.2, the Stanislaus County general plan also specifies buffer and setback guidelines for new or expanded development and mitigation program guidelines for residential development. The purpose of the buffer and setback guidelines is "to protect the long-term health of local agriculture by minimizing conflicts resulting from normal agricultural practices as a consequence of new or expanding nonagricultural uses approved in or adjacent to the A-2 (General Agriculture) zoning district." The County's farmland mitigation program applies to residential development.

Unprecedented population growth throughout the 1990s increased pressure to convert productive agricultural lands to non-agricultural uses. As a response to this rapid growth, voters passed the 30-Year Land Use Restriction Initiative (Measure E) in 2008, which requires any redesignation or rezoning of land in the unincorporated area from agricultural or open space use to a residential use to be approved by a majority vote of

county voters at a general or special local election. The Measure E requirements run with the land, meaning land cannot be approved for non-residential use, then subsequently approved for residential use without a general or special election vote.

Direct and Indirect Impacts

Farmland Resources: The Project would convert approximately 22.6 acres of prime and unique farmland to public ROW. FPPA coordination with NRCS included completion of Form CPA-106. The farmlands in the project area received a total corridor assessment value of 125 points on Form CPA-106. The farmland conversion guidance in Appendix C of the Caltrans Environmental Handbook, Volume 4, indicates that "sites receiving a total score of less than 160 points shall be given minimal level of consideration for protection and no further alternative analysis need be evaluated for farmland issues under the FPPA." The conversion of approximately 22.6 acre of prime and unique farmland to nonagricultural use represents approximately 0.0053% of the total agricultural land use in Stanislaus County or approximately 0.006 % of the prime and unique farmland in the County.

Other Reasonably Foreseeable Actions

Farmland Resources: Of the 12 transportation improvement projects listed under measure Traffic-1, six have the potential to involve agricultural land. The Departments' SR 132 West Freeway/ Expressway Project would convert 64.8 acre of prime and unique farmland to a transportation use. Section 3.1.1 above list the 'Current and Planned Development Projects in the Vicinity' of the Project.

Potential Cumulative Impacts/ Report Results

Farmland Resources: The proposed Project would convert some farmland and other transportation projects in the County may convert farmland. Stanislaus County's Measure E substantially limits the conversion of agricultural lands in Stanislaus County to non-agricultural uses. Since its enactment in 2008, no conversions of agricultural land subject to Measure E have been approved. The County, City of Modesto, and City of Ceres have provided land use designations to guide future growth in the study area; and new development must adhere to these land use designations, per the rules and regulations of the relevant jurisdictions. Adherence to these restrictions reduces pressure for unplanned development and the conversion of agricultural uses by making adequate quantities of land available for development in locations that best serve the policy goals of the relevant jurisdictions. Given the strong existing land use regulations limiting the conversion of agricultural land, and the fact that the project does not provide new access that would make conversions of land convenient, the Project is not anticipated to contribute to a cumulative adverse effect for farmland resources.

Assess Need for Mitigation

Farmland Resources: No mitigation is proposed.

Chapter 3 California Environmental Quality Act (CEQA) Evaluation

3.1 Determining Significance under CEQA

The project is subject to federal, as well as Stanislaus County environmental review requirements because Stanislaus County proposes the use of federal funds from the Federal Highway Administration (FHWA). Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Stanislaus County is the project proponent and the lead agency under CEQA. FHWA's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by the Department pursuant to 23 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and the Department.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or a lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require the identification of each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most County projects such as Best Management Practices

(BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the Project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.2.1 Aesthetics

Except as provided in Public Resources Code Section 21099 would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

CEQA Significance Determinations for Aesthetics

a) As discussed in the Departments' approved Visual Impact Assessment report and summarized in section 2.1.9 (Visual/ Aesthetics) the proposed Project would not result in substantial adverse impacts to the visual environment. Implementation of AES-1 would further reduce this already less this significant impact.

b) The Project does not involve any state highways. No impact would occur.

c) The Project is located in an urbanized area. No impact would occur.

d) The proposed expressway is roughly one mile long and near the Modesto City–County Airport which requires that approach surfaces be kept free from obstructions that could affect Navigable Airspace. These safety requirements limit the placement and use of

street lighting along the route. To increase safety a concrete median safety barrier is proposed to create a divided expressway.

Car headlights and taillights on the new bridge and causeway would be a new source of nighttime light. This impact is less than significant given the lack of residential uses adjacent to the new bridge and causeway and the existing ambient nighttime light conditions in this urban area.

3.2.2 Agricultural and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☒	☐	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

CEQA Significance Determinations for Agricultural and Forestry Resources

a) The Project would convert approximately 22.6 acre of Prime Farmland to nonagricultural use. This represents approximately 0.006 percent of the farmable land in Stanislaus County. This impact is less than significant.

b) The Project is consistent with existing zoning. One parcel (APN 018-062-002) in the Project area is under Williamson Act contract (No. 1977-2803). The Project would need

to acquire approximately 6.38 acre of the total 78.19 acre APN 018-062-002. No other agricultural lands within the project area are currently under Williamson Act contract. The Project would comply with the noticing requirements of the Land Conservation Act of the 1965. With implementation of measure AG-1 this impact is less than significant.

c) Forest land and timberland do not occur within the project area, no impact would occur.

d) Forest land and timberland do not occur within the project area, no impact would occur.

e) The Project would have no further effect on farmland beyond the impacts discussed above. The Project would not indirectly convert farmland due to access restriction. The Project would not reduce the demand for farm support services so as to jeopardize the continued existence of these support services and, thus, the viability of the farm's remaining area.

In addition to the agricultural goals and policies discussed in section 2.1.1.2.2, the Stanislaus County general plan also specifies buffer and setback guidelines for new or expanded development and mitigation program guidelines for residential development. The purpose of the buffer and setback guidelines is "to protect the long-term health of local agriculture by minimizing conflicts resulting from normal agricultural practices as a consequence of new or expanding nonagricultural uses approved in or adjacent to the A-2 (General Agriculture) zoning district." These guidelines apply to all projects requiring approval by a discretionary permit. The Project is not a development project and does not require a discretionary permit from Stanislaus County. The County's buffer and setback guidelines do not apply to the Project. Likewise, the project is not a residential development project, and the County's farmland mitigation program guidelines do not apply to the Project. This impact is less than significant.

3.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☐	☒
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

CEQA Significance Determinations for air quality

a) The proposed project incorporates the PM10 control measures as outline in the SJVAPCD's Regulation VIII for construction mitigation, which is consistent with the District's SIP and the District's PM10 Maintenance Plan. Therefore, the Project would not conflict with or obstruct implementation of any SJVAPCD's air quality management plans.

b) The results of the air quality analysis, described in section 2.2.6 (Air Quality) above, demonstrate that the proposed Project's short-term and long-term air quality impacts would not:

- Worsen air quality in the project area.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Expose sensitive receptors to substantial pollutant concentrations.

c) See response to item b above

d) Construction activities would involve the use of construction equipment and asphalt paving, which have distinctive odors. Odors are considered less than significant because of the limited number of the public affected and the short-term nature of the emissions.

3.2.4 Biological Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

CEQA Significance Determinations for biological resources

a) As discussed in Section 2.3 the Project has the potential to impact the special-status plant and animal species listed in Table 2.4-4 (Special -Status Plant Species), Table 2.4-5 (Special-Status Animal Species), and Table 2.4-6 (Threatened and Endangered Species). Implementation of measures BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), BIO-3 (Seasonal Wetland), BIO-4 (Other Special-Status Plants), BIO-5 (Silvery legless lizard), BIO-6 (Western Pond Turtle), BIO-7 (Migratory Birds and Birds of Prey), BIO-8 (Burrowing Owl), BIO-9 (Bats), BIO-10 (Vernal pool Fairy shrimp), BIO-11 (Valley elderberry longhorn beetle), and BIO-12 (Steelhead – California Central Valley) would reduce impacts to less than significant.

b) As discussed in Section 2.3 the Tuolumne River, the riparian forest, and seasonal wetland are special-status natural communities in the Project area. Implementation of measures BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), and BIO-3 (Seasonal Wetland) would reduce impacts to less than significant.

c) See discussion above.

d) The Project area is located in an area that supports both urban and rural uses. Construction of the project could temporarily disrupt movement of native wildlife species that occur in or adjacent to the Project area. The new bridge over the river would not create any permanent barriers to fish movement. Daytime construction activities would result in minimal disruption of nocturnal wildlife movement. The proposed viaduct and bridge would be elevated above the floodplain, and are not substantial barriers to wildlife movement. Although construction disturbance may temporarily hinder wildlife movements within the project area, the impact is less than significant due to its short-term nature.

e) The Project would not be inconsistent with any local policies or ordinances protecting biological resources.

f) The Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan as none exist for Stanislaus County or the Project area. California Public Resources Code § 5093.50 created the California Wild and Scenic Rivers System. The California Wild and Scenic Rivers System protects the certain designated rivers from future development that might inhibit the free flow of the river. “Free-flowing” means existing or flowing without artificial impoundment, diversion, or

other modification of the river. The Tuolumne River is not a state designated wild and scenic river.

3.2.5 Cultural Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

CEQA Significance Determinations for cultural resources

a) The Project cultural resources documentation (ASR, HRER, and HPSR) concluded that '*No Historic Properties Affected is appropriate for this undertaking because there are no historic properties within the APE.*" No impact would occur.

b) See response to item a.

c) The Project ASR, HRER, and HPSR document identified no known cemeteries or burials within the project study area. Should human remains be discovered during the excavation portion of the Project, the project contract would include provisions that would require notification of the County and compliance with California Health and Safety Code section 7050.5 and California Public Resources Code section 5097.9 et seq.

3.2.6 Tribal Cultural Resources

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	☐	☐	☐	☒
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical	☐	☐	☐	☒

resources as defined in Public Resources Code section 5020.1(k), or				
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

CEQA Significance Determinations for Tribal Cultural Resources

a) i-ii. No documentation regarding tribal cultural resources was identified or received that would facilitate an eligibility determination pursuant to PRC section 21074, 5020.1(k) or 5024.1.

A Sacred Lands File (SLF) search request was submitted to the NAHC on 15 September 2017. The NAHC responded on 4 October 2017 stating that there are no known sacred lands within a half-mile radius of the Project APE. The NAHC provided a list of six Native American tribes or individuals to be contacted for more information regarding the potential for tribal resources within the vicinity of the APE.

Combined Assembly Bill 52/Section 106 consultation letters composed by the County were sent on 4 June 2019, requesting any information related to tribal resources or heritage sites within or adjacent to the APE. Groups contacted included the Calaveras Band of Mi-Wuk, Indians, the California Valley Miwok Tribe, the North Valley Yokuts Tribe, the Southern Sierrra Miwuk Nation, the Tule River Indian Tribe, and the Tuolumne Band of Me-Wuk Indians.

The Tuolumne Me-Wuk Tribal Council, responded by letter on 11 June 2019, stating that the tribe has no concerns regarding the Project at this time, but would like to be contacted in the event of any inadvertent discoveries.

Additional attempts at contact were made by email or phone on 26 June 2019 and 5 July 2019 with no responses.

3.2.7 Energy

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

CEQA Significance Determinations for Energy

a) Energy usage during project construction would be to power construction equipment on site during construction activities. Future road and bridge maintenance activities (e.g. vegetation control, street sweeping etc.) would likely involve the use of electric, diesel, or gas-powered equipment.

The project would be required to comply with all applicable standards and regulations regarding energy conservation and fuel efficiency, which would ensure that the future activities would be energy efficient to the maximum extent practicable. The project would not be considered to result in a wasteful, inefficient, or unnecessary use of energy, and impacts related to construction and operational energy would be considered less than significant. Operationally, the Project reduces VMT compared to the "No Project" alternative. The reduction in VMT reduces the diesel and gasoline usage.

b) Stanislaus County General Plan Program 1-7 (Building and Design Standards for Residential Energy Conservation) promote the reduction of energy usage and costs through building and design practices that meets the minimum standards of Title 24, and encourage conservation of energy resources and utilization of alternative energy resources. The County promotes energy conservation through section 20.52.250 of the Stanislaus County Subdivision Ordinance, requiring that to the extent feasible, subdivisions are designed to provide passive or natural heating and cooling opportunities. The Project does not conflict with County General Plan Program 1-7 (Building and Design Standards for Residential Energy Conservation) since it is a road improvement project.

3.2.8 Geology and Soils

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☐	☐	☒

b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

CEQA Significance Determinations for Geology and Soils

a) i-iv, The Project site does not lie within or adjacent to an Alquist-Priolo Earthquake Fault Zone. Active faulting has not been mapped as occurring across or adjacent to the Project site. The closest active fault is the Great Valley 07 (Orestimba) fault, which is located approximately 17.8 miles northwest of the Project site and is capable of generating a maximum moment magnitude earthquake (Mmax) of 6.7. Surface rupture, due to faulting within the Project site, is not expected.

The potential for surface rupture from faulting is considered low. Ground rupture and/or fault creep is not expected to occur, but some degree of ground motion is expected from seismic activity in the region. However, risk of loss, injury, or death because of seismic activity is unlikely to occur and the proposed Project is not anticipated to increase the risk to workers during construction or the traveling public during operation of the roadway.

The preliminary results from the liquefaction evaluation show that portions of the soil profile with loose sand/silt above a discrete gravel layer is susceptible to liquefaction with approximately 0.5 to over 1 inch of settlement. A more detailed analysis of liquefaction potential would be required for the design of proposed bridge foundations. Implementation of GEO-1 would reduce potential liquefaction and seismic settlement impacts.

The Project site has no known history of subsidence, rock falls/landslides, or embankment failures due to seismic activity, and none were observed during limited field observations and a review of available published seismic hazards for the Project area. The site is generally level, except for the bluffs at the edge of the floodplain which are underlain by generally stable soils, therefore natural slope seismic instability does not appear to be an issue within the Project limits.

b) Measure BIO-2 requires implementation of best management practices (BMPs) consistent with the Stanislaus County Storm Water Management Program (SWMP) and the current edition of the Departments' Stormwater Quality Handbooks to minimize the

potential for siltation and downstream sedimentation. Construction activities would include implementation of stormwater runoff best management practices (BMPs). Application of these requirements and measures would prevent substantial erosion or topsoil loss. Areas temporarily disturbed would be revegetated and reseeded with native grasses and other native herbaceous annual and perennial species. No seed of nonnative species would be used unless certified to be sterile.

c) See response to items a (i-iv)

d) Per section 2.2.3.3.1 of this document soils in the Project area have a low expansion potential based on the Departments' definition.

e) The Project does not include septic or wastewater facilities.

f) As described in section 2.2.4.3.1 of this document, fossils may be recovered where vertical impacts exceed 3 feet in Pleistocene deposits or 8 feet in Holocene deposits. Also the excavation for the borrow area is highly sensitive for fossils. If important paleontological vertebrate fossil resources are present in the Project area then construction activities could cause adverse impacts under NEPA and significant impacts under CEQA, such as destruction and loss of scientifically significant paleontological vertebrate fossil resources. Implementation of PALEO-1 (Paleontological Mitigation Plan) would reduce potential impacts to less than significant.

3.2.9 Greenhouse Gases

I. GREENHOUSE GAS EMISSIONS—Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

CEQA Significance Determinations for Greenhouse Gases

a) Impacts are considered less than significant, see section 3.3 Climate Change

b) Impacts are considered less than significant, see section 3.3 Climate Change

3.2.10 Hazards and Hazardous Materials

Would the project:	Significant and Unavoidable Impact	Less Than Significant with	Less Than Significant Impact	No Impact

		Mitigation Incorporated		
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

CEQA Significance Determinations for Hazards and Hazardous Materials

a) Small amounts of hazardous materials would be used during construction activities (i.e., equipment maintenance, fuel, solvents, roadway surfacing and striping materials). Hazardous materials would only be used during construction of the Project, and any hazardous material uses would be required to comply with all applicable local, state, and federal standards associated with the handling and storage of hazardous materials. Use of hazardous materials in accordance with applicable standards ensures that any exposure of the public to hazard materials would have a less-than-significant impact.

b) As described in section 2.2.5 of this document, the results of the PSI-ADL Study indicate:

- That the soils in the Project area contain detectable concentrations of metals (arsenic and lead), pesticides, PAHs, and SVOCs, however, the concentrations are below the threshold limits and the soil can be pre-classified as Non-Hazardous.
- The Ceres Canal Bridge structural samples did not contain ACM.
- LBP was detected in yellow traffic striping on the Ceres Canal Bridge and would need to be disposed of at a Class I Landfill.

Implementation of measure HAZ-1 would reduce potential impacts to less than significant.

c) No existing schools occur within 0.25 mile of the Project. Samuel Vaughn School (elementary) is located at 3618 Helen Perry Road in the City of Ceres. The school is approximately 0.46 mile west of the project limits. The Ceres Unified School District, Empire Union School District, Modesto City School District web sites were reviewed to determine if any future schools are planned within 0.25 mile of the Project. No evidence of any future schools being planned within 0.25 mile of the Project was found.

d) Per the Project ISA a review of the online GeoTracker and EnviroStor database did not show any sites within the Project area. The GeoTracker database identified two cleanup sites within 1-mile of the southern end of the Project area, and four closed leaking underground storage tank (LUST) cleanup sites near the northern end of the Project area. The EnviroStor database identified one waste oil cleanup site and one historical hazardous waste facility (0.4 miles and 0.7 miles from the Project location, respectively).

e) See response in section 3.2.14 below (Noise).

f) Project activities could result in temporary traffic control. Project construction activities would be coordinated with local law enforcement and emergency services providers.

3.2.11 Hydrology and Water Quality

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i. result in substantial erosion or siltation on- or off-site	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐

iv. Impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

CEQA Significance Determinations for Hydrology and Water Quality

a) Construction of the proposed project could introduce sediments and other contaminants typically associated with construction into stormwater runoff. Stormwater flowing over the project features during construction could carry various pollutants downstream such as sediment, nutrients, bacteria and viruses, oil and grease, heavy metals, organics, pesticides, and miscellaneous waste. These pollutants could originate from soil disturbances, construction equipment, building materials, and workers. Erosion potential and water quality impacts are always present during construction and occur when protective vegetative cover is removed and soils are disturbed.

Measures BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), BIO-3 (Seasonal Wetland), BIO-10 (Valley elderberry longhorn beetle), and BIO-11 (Steelhead – California Central Valley) include actions that reduce potential impacts to water quality as well as biological resources. Water quality objectives would be met through adherence to BIO-1, BIO-3, BIO-6, BIO-7, and BIO-8 and other construction provisions, precautions, and stipulations as described in the National Pollution Discharge Elimination System (NPDES) permit, Section 404 CWA permit, Section 401 CWA Water Quality Certification, and 1602 Streambed Alteration Agreement.

Coverage under the Statewide General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ)) would be obtained. The County would require the contractor to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to reduce or minimize discharge of pollutants from construction activities.

b) The Project would result in an increase in impervious area, which would decrease the area available for runoff to infiltrate the soil and potentially decrease the volume of water that previously recharged local aquifers. Reduced groundwater recharge could also potentially impact the beneficial uses of groundwater basins.

The Project is located within the Modesto and Turlock groundwater subbasins. The combined surface area of the two subbasins is approximately 594,000 acres. The Project would add 15.93 acres of impervious area, increasing the impervious area within these subbasins by 0.0038 percent. While this increase in impervious area reduces the available area for infiltration of stormwater, the impacts to groundwater would be minimal in comparison to the total groundwater basin area. The Project would not involve any withdrawals from an aquifer or groundwater table.

c) i-iv. Permanent impacts to water quality may result from the addition of impervious area, which prevents runoff from naturally dispersing and infiltrating into the ground, resulting in increased concentrated flow. The additional flow has the potential to transport an increased amount of sediment and pollutants to Tuolumne River, as well as increase erosion due to changes to the Tuolumne River hydrograph. The new bridge and abutments have the potential to impact flood control functions and erosion and accretion patterns.

As discussed in section 2.2.2 of this document the Project is subject to the SWRCB Phase II Small MS4 permit. The Project creates or replaces more than 5,000 sq feet of impervious area and is required to implement post-construction stormwater controls for new impervious surfaces under the MS4 Permit. Site Design Measures, Treatment Control Measures, and hydromodification measures would be implemented to "infiltrate, evapo-transpire, harvest and reuse, or biotreat storm water runoff" and offset the difference between the pre- and post- construction peak flow runoff rates and volumes.

Runoff from new impervious areas would be treated with stormwater Treatment Control Measures (aka BMP's) and diverted into modified drainage systems, resulting in minimal hydromodification and stormwater pollution effects. Long-term impacts during operation and maintenance of these BMPs and drainage systems are anticipated to be minimal.

As discussed in section 2.2.2.4 of this document of Measure BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), BIO-3 (Seasonal Wetland), BIO-10 (Valley elderberry longhorn beetle), and BIO-11 (Steelhead – California Central Valley) would reduce potential temporary and permanent impacts to water quality. Further, implementation of measure WQ-1 (Hydromodification) would reduce potential impacts associated with the difference between the pre- and post-construction peak flow runoff rates and volumes as required.

As discussed in section 2.2.1 the proposed Project would construct a new bridge structure over Tuolumne River. Because there is no existing bridge or other hydraulic structures inside the Tuolumne River available at the Project location, the proposed bridge structure would be a net fill inside the existing 100-year floodplain, and hydraulic analysis outputs showed it would raise the 100-year flood profile of Tuolumne River by approximately 0.11 feet or less. This would increase the width of 100-year floodplain upstream of the proposed bridge by approximately 3 feet or less.

Potential short- term impacts during the construction of the new bridge to the natural and beneficial floodplain values include the following: 1) loss of vegetation during construction activity; and 2) temporary disturbance of wildlife and aquatic habitat. Potential permanent impacts include modification of vegetation and wildlife/aquatic habitat at the new bridge structure, approaches, and piers.

Implementation of Measure BIO-1 (Riparian Forest), BIO-2 (Tuolumne River), BIO-3 (Seasonal Wetland), BIO-10 (Valley elderberry longhorn beetle), and BIO-11 (Steelhead – California Central Valley) would reduce potential temporary and permanent impacts to the natural and beneficial floodplain values present in the Project area. Implementation of floodplain of measure HYDRO-1 would reduce potential effects associated with the increase in the BFE.

d) The Project area is not located in a tsunami, or seiche zone. The new Faith Home Road crossing of the Tuolumne River would pass the Q200 (200-year return interval) flood event elevation. On the northern end of the alignment, a peninsula berm would extend south from the northern bluff beyond the existing railroad tracks into the floodplain. The crown elevation of the embankment would be above the Q200 flood elevation and would protect the road and railroad overcrossing from a Q200 flood event providing an all-weather roadway that maintains emergency vehicle services and goods movement in the region.

The base flood is the flood that has a 1 percent-annual-chance (100-year flood of Q100) of occurrence in any given year. Hydraulic modeling of the proposed bridge indicates the proposed Faith Home Road and Garner Road Expressway bridge and bridge approach areas are not overtopped during a 100-year storm event. Because the Project would not be overtopped by the 100-year storm event and is being designed to be above the Q200 the risk release of pollutants due to project inundation is less than significant.

e) The Tuolumne River is a CWA 303(d) listed impaired water body for the following constituents: Group A pesticides, mercury, temperature, toxicity, chlorpyrifos, and diazinon. The chlorpyrifos and diazinon agricultural impairments are addressed through Board established Waste Discharge Requirements for agricultural discharges as established in the CVRWQCB's Basin Plan under resolution R5-20140041. All other impairments mentioned remain on the "TMDL required list" with TMDL's to be completed in 2021 and 2022. The Project does not include activities that would interfere with the implementation of the yet to be completed TMDLs' or the CVRWQCB's established Waste Discharge Requirements for agricultural discharges.

3.2.12 Land Use and Planning

II. LAND USE AND PLANNING—Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

CEQA Significance Determinations for Land Use and Planning

a) The Project would provide another link between the north and south portions of the study area and would not divide an existing community or neighborhood. The Project would not separate residences from community facilities. The Project would improve both regional and interregional circulation within the County and the Cities of Modesto and Ceres.

b) Local and/or regional plans that are applicable to the Project are discussed in section 2.1.2. The Project is consistent with the local and/or regional plans discussed in section 2.1.2 and would not cause a significant environmental impact due to a conflict with the applicable local and/or regional plans.

3.2.13 Mineral Resources

III. MINERAL RESOURCES—Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

CEQA Significance Determinations for Mineral Resources

a) Per the California Department of Conservation,1993, Special Report 173, Mineral Land Classification of Stanislaus County the Project area is mapped as MRZ-3a sg(C14) and MRZ-3a sg(C16). The MRZ-3a designation is defined as '*Areas containing known mineral occurrences of undetermined mineral resource significance. Further exploration work within these areas could result in the reclassification of specific localities into MRZ-2a or MRZ-2b categories.*' The sg(C#) designates the class of mineral resource zone, in this case 'sg' = sand and gravel and C = concrete, and the '#' is the identification number for an area described in the text of Special Report 173. Below are the text descriptions of MRZ-3a sg(C14) and MRZ-3a sg(C16) zones.

- **MRZ-3a sg(C14):** This zone includes the following sedimentary formations of Pliocene and younger age; Laguna Formation, the North Merced Gravel, Turlock Lake Formation, Riverbank Formation, Modesto Formation, and post-Modesto alluvium. The sedimentary rocks within this classified zone predominately contain varying proportions of fine- and coarse-grained alluvium. All of these sediments form elevated river terraces and fans associated with the massive tonnages of alluvium that have drained from the Sierra Nevada during the past 4 million years.

- **MRZ-3a sg(C16):** Unconsolidated Holocene fine grained San Joaquin River alluvium predominately consists of medium- to fine-grained sands, silt, and clay with rare, thin (1-3 foot thick) lenses of pebbles and coarse sands. Floodplain deposits range in thickness from 5-35 feet and typically contain less than 20 percent coarse-grained sand.

Construction of various Project components would require the use of mineral resources including sand, gravel, and aggregate. These materials are expected to be sourced

locally. While the Project would use mineral resources during Project construction, the completed Project would not result in the loss of availability of a known mineral resource.

b) The Project area is not located in a designated mineral resource recovery site.

3.2.14 Noise

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐
c) For a project located within -the vicinity of a private airstrip or-an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

CEQA Significance Determinations for Noise

a) According to the Departments' Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the applicable NAC. Approaching the NAC is defined as coming within 1 dBA – for example, 66 dBA for residential and 71 dBA for commercial.

The Departments' impact thresholds are generally equivalent to the local land use compatibility matrices found in Stanislaus County Code Chapter 10.46 (Noise Control). The local compatibility standards are focused on new land development projects adjacent to transportation noise sources, whereas the Departments' standards are focused on noise impacts from roadway projects; therefore, the Departments' standards are being used to determine the transportation noise impacts of the Faith Home Road Project.

The traffic noise modeling results range from 47 to 64 dBA Leq as shown in Tables 2.3-30 and 2.3-31. The predicted future noise levels do not approach or exceed the applicable NAC for activity categories B (67 dBA Leq(h) Exterior) and E (72 dBA Leq(h) Exterior).

The traffic noise modeling results indicate that predicted future noise levels at 8 of the 9 receiver locations would not substantially exceed the existing noise level (defined as a

12 dBA or more increase). An increase of greater than 12 dB is predicted at receiver R8 for both Phase 1 and Phase 2. However, R8 is not a residential use, it has been converted to office space for TID and does not include any areas of significant outdoor activity. This impact is considered less than significant.

b) Installation of pile bents that support the temporary work trestle and falsework would be likely use a vibratory impact driver. These activities would occur only during construction. Operations of are not anticipated to result in excessive ground-borne vibration or ground-borne noise levels.

c) The Modesto City-County Airport is located approximately one mile west of the Project area. The City of Modesto owned Modesto City-County Airport is a commercial-service airport primarily used for general aviation.

Per the 2016 Stanislaus County Airport Land Use Compatibility Plan (ALUCP), the Project area is located within the Airport Influence Boundary of the Modesto City-County Airport. Table 1 (Noise Compatibility Criteria) and Table 2 (Safety Compatibility Criteria) of the ALUCP list general land use categories and indicate each use as being either "normally compatible," "conditionally compatible," or "incompatible" depending upon the noise and safety Compatibility Zones in which it is located." Per Table 1 of the ALUCP 'Transportation Routes: road & rail rights-of-way, bus stops' are 'normally compatible' land uses for all noise exposure ranges.

Per ALUCP figure Map MOD-3 (Airport Safety Zones Policy Map) to Project area north of the Hatch Road and Faith Home Road intersection is in Safety Zone 6 (Traffic Pattern Zone). The Project area south of the Hatch Road and Faith Home Road intersection is in Safety Zone 4 (Outer Approach/Departure Zone). Per ALUCP Table 2 (Safety Compatibility Criteria) 'Transportation Routes: road & rail rights-of-way, bus stops' are 'normally compatible' in both Safety Zones 4 and 6. The proposed Projects is the construction of the new road connection including a new bridge crossing of the Tuolumne River. Project activities area identified as 'normally compatible' in both ALUCP Table 1 (Noise Compatibility Criteria) and Table 2 (Safety Compatibility Criteria). The Project would not result in a safety hazard or expose people residing or working in the Project area to excessive noise levels.

3.2.15 Population and Housing

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

CEQA Significance Determinations for Population and Housing

a) As discussed in section 2.1.5 (Growth) of this document the project would not be growth inducing, either directly or indirectly.

b) The Project would not displace any people or housing.

3.2.16 Public Services

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

CEQA Significance Determinations for Public Services

a) As discussed in section 2.1.5 (Growth) of this document the Project would not be growth inducing, either directly or indirectly. Therefore, no increased short-term or long-term demands for public services would occur.

3.2.17 Recreation

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational	☐	☐	☐	☒

facilities such that substantial physical deterioration of the facility would occur or be accelerated?				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☒	☐	☐

a) As discussed in section 2.1.5 (Growth) of this document the Project would not be growth inducing, either directly or indirectly. The construction of the Project would not increase the use of existing neighborhood and regional parks or other recreational facilities.

b) Construction of the Project may require the installation of work trestles in the Tuolumne River or construction of a temporary bypass channel. These project components could impact river usage by boaters. Construction would include installation of a protected channel corridor through which boaters could safely pass under or past the work area. Implementation of REC-1 (protected channel corridor) would reduce potential impacts to recreational boaters using the Tuolumne River in the Project area during construction. The Project does not include any park lands subject to the California Public Park Preservation Act of 1971 (California public resource code § 5400-5409).

3.2.18 Transportation

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☒	☐
e) Result in inadequate parking capacity?	☐	☐	☒	☐

CEQA Significance Determinations for Transportation

a) *Consistency* is defined by the State General Plan Guidelines as, "*An action, program or project is consistent with the general plan if, considering all its aspects, it will further the objectives of the general plan and will not obstruct their attainment.*"

The general plans of the County, Cities of Modesto, and Ceres plan for the construction of an expressway and new Tuolumne River crossing along the Claus Road, Garner Road, and Faith Home Road corridors from north Modesto to Keyes Road in the Keyes area. A Project Study Report was initiated by StanCOG to develop an Official Plan Line for the route, to resolve internal circulation issues within the Beard Industrial Tract, and determine the best engineering solution to cross the Tuolumne River in this area. The current proposed Project is part of this long-planned transportation improvement.

When the State of California passed State Bill (SB) 743 in 2013, it was to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions." When implemented, "traffic congestion shall not be considered a significant impact on the environment" within California Environmental Quality Act (CEQA) transportation analysis (Caltrans 2020).

Commonly known as State Bill (SB) 743, Public Resources Code section 21099 directed the Office of Planning and Research to develop guidelines for assessing transportation impacts based on VMT. With the certification and adoption of the changes to the CEQA Guidelines in 2018 "automobile delay, as described solely by level of service [LOS] or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment."

The Stanislaus County General Plan, Circulation Element states that the County will maintain LOS D or better for all County roadways (Daily LOS) and LOS C or better at intersections (Peak Hour LOS), except, within the sphere of influence of a city that has adopted a lower level of service standard, the City standard shall apply. Chapter V of the City of Modesto *Urban Area General Plan* states the following *"To the extent feasible, the City shall strive for LOS D on all streets and intersections."* The City of Ceres General Plan states this '*The City shall develop and manage its roadway system to maintain Level-of-Service of at least C on secondary collectors and local streets and Level-of-Service D on primary collectors, arterials, expressways, and freeways."* The City of Hughson General Plan states "*The City shall strive to maintain a LOS of D on major streets and intersections."*

Implementation of TRAFFIC-1 would address Project impacts to traffic and circulation. With implementation of TRAFFIC-1 operational intersection roadway, and, freeway deficiencies would be the same or less (Table 3.2-1) for both Phase 1 and Phase 2 in the design year (2045).

Table 3.2-1. Summary – Design Year (2045) Conditions

Category	No Build Alternative	Build Alt. Phase 1 Two-Lane Bridge	Build Alt. Phase 2 Four-Lane Bridge
Change in VMT from No Build Alternative	0%	-0.31%	-0.071%

Category	No Build Alternative	Build Alt. Phase 1 Two-Lane Bridge	Build Alt. Phase 2 Four-Lane Bridge
Change in VHD from No Build Alternative	0%	-10%	-17%
Intersection Operations Deficiencies	8	8	7
Freeway Operations Deficiencies	10	10	10
Change in Expected Collisions on Parallel Routes from No Build Alternative	0%	-8.8%	-14%

The proposed Project is an important component of the long-planned Faith Home Road Expressway evaluated and included in the general plans of the County, City of Modesto, and City of Ceres. Implementation of the Project would further the objectives of the respective general plans and would not obstruct their attainment. Project impacts are less than significant.

b) Section 15064.3 of the CEQA Guidelines establishes specific considerations for evaluating a project's transportation impacts. The CEQA Guidelines identify VMT, which is the amount and distance of automobile travel attributable to a project, as the most appropriate measure of transportation impacts. Projects that decrease vehicle miles traveled in the Project area, compared to existing conditions, should be presumed to have a less than significant transportation impact.

The Project Transportation Analysis Report calculated the performance measures of VMT, vehicle hours of travel (VHT), and vehicle hours of delay (VHD) using the design year forecasting models to estimate the Projects area-wide effects (Table 2.2-22 Area-wide Average Daily Performance Measures).

Per Table 2.2-22 in section 2.1.8.3 of this document, both build alternatives (Phase 1 and Phase 2) would reduce VMT compared to the No Build Alternative. Compared to the base year model, the No Build Alternative would have 38 percent more VMT. With the two-lane bridge (Phase 1), the VMT reduction occurs primarily because a shorter path would be provided by the new connection between Faith Home Road and Garner Road. The VMT reduction compared to the No Build Alternative is less with a four-lane bridge (Phase 2) because some drivers would divert to the new connection to take advantage of shorter peak-hour travel times even though the trip length would be longer.

c) The Project does not include geometric design features that would substantially increase hazards. The Project is consistent with the existing zoning in the Project area. Project impacts area lees than significant.

d) Implementation of TRAFFIC-2 (Traffic Management Plan) includes coordination with emergency service providers. Project impacts area less than significant.

e) Finch Road in the Project area is posted no parking. Faith Home Road south of the Hatch Road intersection is also posted no parking. Residential parking does not occur in Project area. Parking for the various business located in the northern portion of the Project area is provided on each parcel. Road and intersection improvements at Finch Road and Garner Road would result in impacts to parking.

ROW acquisition, intersection reconfiguration, and widening of Garner Road and Faith Home Road south of the Finch Road intersection would displace approximately 15 passenger vehicle parking spots from Don's Mobile Auto Glass (APN 036-016-025). Widening of Garner Road and Faith Home Road south of the Finch Road intersection would require the relocation of Don's Mobile Glass primary truck access. An improved wider truck and public access driveway would be constructed at the west end of the property.

Acquisition on APN's 036-016-045, 009-018-039, 009-018-053, and 039-011-010 at the north end of the Project area would not reduce the overall number of marked parking spaces at the businesses on these parcels. There would be up to four additional parking stalls added to the California Freight parcel due to the added on-site pavement area. The Sierra Pacific Warehouse parking stalls along Finch road would be slightly shifted (~3 feet north) to accommodate the Finch Road widening. No striped parking stalls are impacted within the Del Monte Facility, however, the Faith Home improvements would reduce the available truck trailer storage area.

The County has met with Don's Mobile Auto Glass and discussed the potential loss of up to 15 passenger vehicle parking spaces at their facility. Don's Mobile Auto Glass stated that the passenger vehicle parking lot is rarely at capacity and they do not see this as a major concern for future operations. Don's Mobile Auto Glass also suggested the possible use of a portion of the parcel to establish additional parking spaces if needed. Project impacts are less than significant.

3.2.19 Utilities/ Service Systems

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new water or expanded wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☒

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

CEQA Significance Determinations for Utilities/ Service Systems

a) The Project would construct new stormwater drainage facilities to address road runoff from the new road connection. Mitigation measure WQ-1 requires Site Design and Treatment Control Measures be implemented in accordance with in the current MS4 permit and the County's Post-Construction Standards Plan.

Temporary utility impacts would include relocation of exiting power poles and one high voltage line. Section 2.1.7 above includes a discussion of temporary impacts to utilities and service systems.

The TID Ceres Main Canal flows in a concrete lined channel on the south side of Hatch Road. It flows under Faith Home Road through a two span bridge. The TID Faith Home Spill ditch control structure is located immediately west of the bridge in the north bank of the canal. The control structure has both automatic and manual controls that allow high flows in the Ceres Main Canal to be directed into the spill ditch and return to the Tuolumne River.

An underground irrigation supply lateral crosses over the spill ditch via a flume approximately 1,300 feet north of Hatch Road. The irrigation supply lateral pipe is likely an unreinforced concrete pipe east of the spillway. It would be replaced with a reinforced concrete pipe under the expressway. TID has a dirt or gravel access road on both sides of the spill ditch. The access roads are necessary for maintenance of the spillway, and the westerly road provides access to the TID Ceres Remote office and emergency dirt stockpile located on the parcel.

Faith Home Road crosses over the Ceres Main Canal via a bridge just south of the Faith Home Road and Hatch Road Intersection. The proposed Project would construct a new, wider bridge east and upstream of the existing bridge. The existing Ceres Main Canal bridge would be left in place; it may be relinquished to the Turlock Irrigation District, as it would no longer convey traffic onto Faith Home Road. The shift of the new bridge to the east avoids the Ceres Main Canal gate control system for the Faith Home Spill ditch on the west side of the existing bridge. Project impacts to utilities and service systems are considered less than significant.

b) The completed Project does not require water service. Sufficient water to construct the project is available. No impact would occur.

c) The completed Project would not require wastewater service. No impact would occur.

d) Solid waste generated by the Project would be limited to construction debris. Solid waste disposal would occur in accordance with federal, state, and local regulations. Bertolotti Disposal and Transfer Station and Gilton Solid Waste Management provide residential, commercial, and industrial solid waste services in cities and unincorporated portions of Stanislas County. The Fink Road Sanitary Landfill is a Class III landfill for nonhazardous municipal solid waste; the facility is owned by Stanislaus County and operated by the Stanislaus County Department of Environmental Resources. Class 1 facilities that accept hazardous waste are located in Kings and Kern counties.

The Fink Road Sanitary Landfill is permitted to receive 2,400 tons of solid waste a day through 2023; per the 2016 County General Plan DEIR it is currently at approximately 50 percent of its permitted capacity. No impact would occur.

e) The Project would conform to all applicable state and federal solid waste management regulations and reduction statutes. No impact would occur.

3.2.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project;	*Potentially Significant Impact*	*Potentially Significant Unless Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

CEQA Significance Determinations for Wildfire

a) (response for Items a through d). The Project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The 2007 CAL FIRE, Fire Hazard Severity Zones in State Responsibility Area (SRA) map identifies that the Project is located in an area classified as Local Responsibility Area (LRA)-Unincorporated

and Local Responsibility Area (LRA)-Incorporated. The Project would not impair an adopted emergency response plan or evacuation route. The Project would not expose project occupants (drivers and passengers of motor vehicles) to the uncontrolled spread of fire. The Project does not require the installation or maintenance of additional infrastructure. The Project would not expose people or structures to significant post-fire risks.

3.2.21 Mandatory Findings of Significance

To be filled out by Lead Agency if required	*Potentially Significant Impact*	*Potentially Significant Unless Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

CEQA Significance Determinations for Mandatory Findings of Significance

a) Through the use of Best Management Practices and the mitigation measures noted previously, the Project would not degrade the quality of the environment.

b) The Project is consistent with the General Plan and would not result in individually limited but collectively significant impacts. Therefore, the project would not cause any additional environmental effects or significantly contribute to a cumulative impact.

c) The Project would not result in substantial direct or indirect adverse effects from noise, either during Project construction or operation, nor would it result in impacts to air quality, water quality or utilities and public services. Therefore, the Project would not cause substantial adverse effects on human beings.

3.3 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research

attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation.[1] In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) are the largest contributors of GHG emissions.[2] The dominant GHG emitted is CO2, mostly from fossil fuel combustion.

Two terms are typically used when discussing how we address the impacts of climate change: “greenhouse gas mitigation” and “adaptation.” "Greenhouse gas mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. “Adaptation" refers to planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).

3.3.1 Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

Federal: To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices.[3] This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability.”[4]

[1] https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014
[2] https://www.arb.ca.gov/cc/inventory/data/data.htm
[3] https://www.fhwa.dot.gov/environment/sustainability/resilience/
[4] https://www.sustainablehighways.dot.gov/overview.aspx

Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

The Energy Policy Act of 1992 (EPACT92, 102nd Congress H.R.776.ENR): With this act, Congress set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 consists of 27 titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.

Energy Policy Act of 2005 (109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Indian energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Standards: This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance,* 74 Federal Register 52117 (October 8, 2009): This federal EO set sustainability goals for federal agencies and focuses on making improvements in their environmental, energy, and economic performance. It instituted as policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities.

Executive Order 13693, *Planning for Federal Sustainability in the Next Decade*, 80 Federal Register 15869 (March 2015): This EO reaffirms the policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities. It sets sustainability goals for all agencies to promote energy conservation, efficiency, and management by reducing energy consumption and GHG emissions. It builds on the adaptation and resiliency goals in previous executive orders to ensure agency operations and facilities prepare for impacts of climate change. This order revokes Executive Order 13514.

U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be

reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions.

U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010[5] and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and ARB will decide on CAFE and GHG emissions standard stringency for model years 2022–2025. NHTSA has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Trump ordered EPA to reopen the review and reconsider the mileage target.[6]

NHTSA and EPA issued a Final Rule for "Phase 2" for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO2 emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

Executive Order 13783, Promoting Energy Independence and Economic Growth, of March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

State: With the passage of legislation including State Senate and Assembly bills and executive orders, California has been innovative and proactive in addressing GHG emissions and climate change.

Assembly Bill 1493, Pavley Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order S-3-05 (June 1, 2005): The goal of this executive order (EO) is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and

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[5]] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

[6] http://www.nbcnews.com/business/autos/trump-rolls-back-obama-era-fuel-economy-standards-n734256 and https://www.federalregister.gov/documents/2017/03/22/2017-05316/notice-of-intention-to-reconsider-the-final-determination-of-the-mid-term-evaluation-of-greenhouse

(3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and SB 32 in 2016.

Assembly Bill 32 (AB 32), Chapter 488, 2006: Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG reduction goals.

Senate Bill 97 (SB 97), Chapter 185, 2007, Greenhouse Gas Emissions: This bill requires the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

Senate Bill 391 (SB 391), Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Executive Order B-16-12 (March 2012) orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

Executive Order B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG

emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMTCO2e). Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, Safeguarding California, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, (SB 32) Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

3.3.2 Environmental Setting

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020. The Scoping Plan was first approved by ARB in 2008 and must be updated every 5 years. ARB approved the *First Update to the Climate Change Scoping Plan* on May 22, 2014. ARB is moving forward with a discussion draft of an updated Scoping Plan that will reflect the 2030 target established in EO B-30-15 and SB 32.

The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California.[7] ARB is responsible for maintaining and updating California's GHG Inventory per H&SC Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided in Figure 3.3-1 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists ARB in demonstrating progress toward meeting the 2020 goal of 431 MMTCO2e[8]. The 2017 edition of the GHG emissions inventory (released June 2017) found total California emissions of 440.4 $MMTCO_2e$, showing progress towards meeting the AB 32 goals.

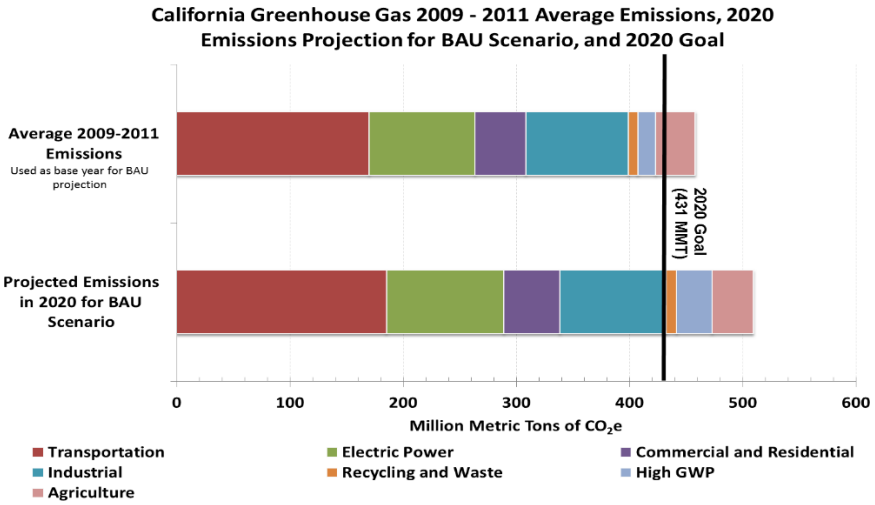
The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the 2008 economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario include reductions anticipated from Pavley I and the Renewable Electricity Standard (30 $MMTCO_2e$ total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 $MMTCO_2e$.

[7] 2016 Edition of the GHG Emission Inventory Released (June 2016): https://www.arb.ca.gov/cc/inventory/data/data.htm

[8] The revised target using Global Warming Potentials (GWP) from the IPCC Fourth Assessment Report (AR4)

The proposed Project is outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.

Figure 3.3-1. 2020 Business as Usual (BAU) Emissions Projection 2014 Edition

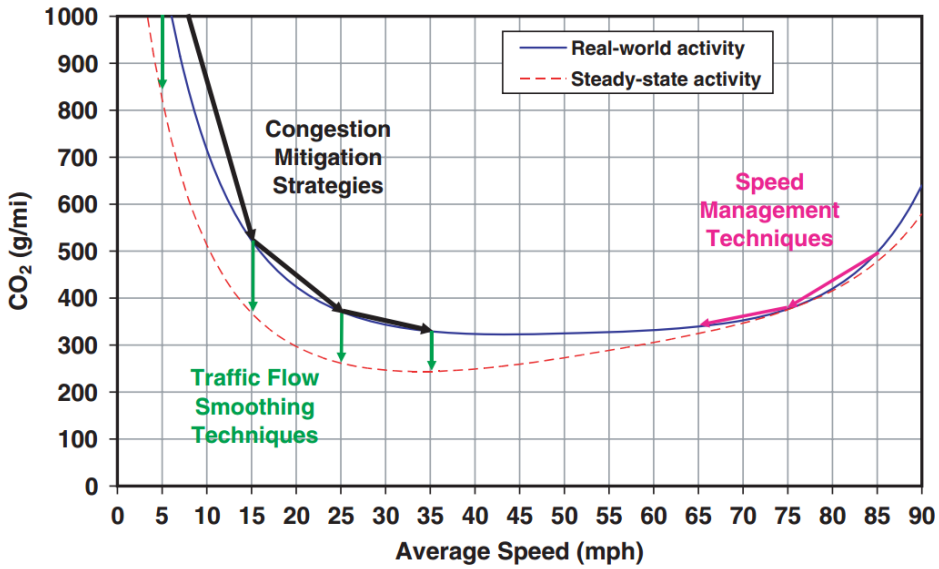


Four primary strategies can reduce GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity), (3) transitioning to lower GHG-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective all four strategies should be pursued concurrently.

FHWA supports these strategies to lessen climate change impacts, which correlate with efforts that the state of California is undertaking to reduce GHG emissions from the transportation sector.

The highest levels of CO_2 from mobile sources such as automobiles occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (Figure 3.3-2). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, GHG emissions, particularly CO_2, may be reduced.

Figure 3.3-2. Possible Use of Traffic Operation Strategies in Reducing On-Road CO2 Emissions



3.3.3 Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.[9] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

GHG emissions for transportation projects can be divided into those produced during operations and those produced during construction. The following represents a best faith effort to describe the potential GHG emissions related to the proposed project.

SJVAPCD has not adopted a specific quantitative level of GHG emissions increase above which a project would have a significant impact on the environment, and below which would have an insignificant impact. This is readily understood when one considers that global climate change is the result of the sum total of global GHG emissions, both manmade and natural. In the absence of scientific evidence supporting a numerical threshold, the SJVAPCD policy applies performance-based standards to assess project-specific GHG emission impacts on global

[9] This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

climate change. The determination is founded on the principal that projects whose emissions have been reduced or mitigated consistent with AB 32, the California Global Warming Solutions Act of 2006, should be considered to have a less than significant impact.

Following SJVAPCD guidance and consistent with the Departments' approach for evaluating GHG and climate change impacts under CEQA for transportation projects, GHG impacts were evaluated based on (1) how a project would contribute to GHG emission mitigation to reduce the impacts to climate change, and (2) how a project would adapt to the effects resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).

3.3.3.1 Operational Emissions

The Faith Home Road and Garner Road Expressway Project is included in the StanCOG 2018 RTP/SCS as Tier I project. The 2018 RTP/SCS is the applicable GHG emissions reduction plan for the Project. The Project would not conflict with the applicable GHG reduction plan as it was included in the 2018 RTP/SCS analysis.

Per Table 2.2-22 in section 2.2.8.3 of this document, both build alternatives (Phase 1 and Phase 2) would reduce VMT compared to the No Build Alternative. With the two-lane bridge (Phase 1), the VMT reduction occurs primarily because a shorter path would be provided by the new connection between Faith Home Road and Garner Road. The VMT reduction compared to the No Build Alternative is less with a four-lane bridge (Phase 2) because some drivers would divert to the new connection to take advantage of shorter peak-hour travel times even though the trip length would be longer.

Table 3.3-1 gives projected CO2e emissions for existing, design year No-Build, and design year Build conditions. Under future Build conditions, CO2 emissions would be slightly lower than under Existing and No-Build conditions. The build alternatives are projected to have lower VMT than the No-Build. Further, improvements in LOS are also expected to improve CO2 emissions. In other words, implementing the Project would result in such a substantial reduction in congestion, that the added capacity on the new roadway would not have a discernable effect on greenhouse gas emissions for the project area.

Table 3.3-1. Estimated Operational CO2 Emissions (tons/year).

	Existing	2025		Increase over No Build	2045		Increase over No Build
		No Build	Phase 1 (two-lane expressway)		No Build	Phase 1 (two-lane expressway)	
Vehicle Miles of Travel	3,954,149	4,382,313	4,377,502	-4,811	5,452,722	5,435,886	-16,835
Fuel Consumption Gallons[1]	159,441	176,706	176,512	-194	219,868	219,189	-679
Total[2]	3,826,596	4,236,292	4,236,288	-4	5,276,827	5,260,535	-16,292

1. Estimated using national average fuel economy of 24.8 miles per gallon
2. Estimated as 24 pounds of CO_{2e} per gallon of fuel used

Construction Emissions: Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities. The Project would also implement BMPs during project construction, some of which (such as limiting the vehicle operation time and maintain equipment in good operation condition) would also reduce GHG emissions.

Using the Roadway Construction Emissions Model, Version 8.1.0, construction-related CO2 emissions were estimated. The model output is summarized in Table 3.3-2.

Table 3.3-2. Estimated Construction CO2 Emissions (tons/construction project)

	Phase 2 (Full Build Out)	**SJVAPCD AQ Significance Thresholds (tons/year)**
Total	2,290	N/A

GHG emissions from Project construction and operation are expected to have a less than significant impact to the environment due to the following:

- The Faith Home Road and Garner Road Expressway Project is included in the StanCOG 2018 RTP/SCS as Tier I project.
- The Project would reduce VMT
- The Project would implement BMPs during project construction, some of which (such as limiting the vehicle operation time and maintain equipment in good operation condition) would also reduce construction related GHG emissions
- GHG from construction would be offset by improvements related to the lifetime and maintenance intervals of the roadways.

Chapter 4 Comments and Coordination

4.1 Early Coordination and Consultation

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential

impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this Project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, public meetings, and Project Development Team (PDT) meetings. This chapter summarizes the results of the efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

A public workshop was held on 11 December 2018 from 6:30 to 9:00PM in the Ceres City Council Chambers. Approximately 200 invitation postcards were mailed out to property owners within 0.25 mile of the Project area. A total of 14 people signed the attendance sheet. At the December event, the community was given the opportunity to voice their questions and concerns, and to provide comments on the Project. No written comments were received at the meeting.

4.2 Consultation and Coordination with Public Agencies and Tribal Governments

California Department of Fish & Wildlife (CDFW), California Natural Diversity Database (CNDDB): The California Natural Diversity Database (CNDDB) was queried for known occurrences of special-status species in or near the Project area (Ceres and Riverbank quads and the eight surrounding quads; data dated 1 September 2019; Appendix B). The original quire was conducted in December 2017, and updated on 17 July 2019,26 September 2019, and 30 January 2020.

California Historical Resources Information System (CHRIS)/ Central California Information Center (CCIC): CHRIS records searches were conducted by the CCIC on 25 September 2018 and again on 12 March 2019 (CCIC File No. 11010N) following alterations to the Project APE. The search for archaeological and historical records covered a one-mile radius around the APE boundary. The records search indicates a total of 35 cultural resources investigations have been completed previously within a one-mile radius of the Project area.

California State Lands Commission (CSLC): Following phone conversations with CSLC staff in early March 2018 a 'Request for Determination of Jurisdiction and Clarification Regarding Geotechnical Coring for Design' was submitted to the CSLC on 16 March 2018. On 16 August 2018 the CSLC responded via letter. The CSLC determined that the Tuolumne River, is State owned sovereign land, and the Project would require a lease for any portion extending beyond the ordinary low-water mark of the interest of the Tuolumne River. The CLSC also determined the proposed geotechnical coring would take place on the upland property adjacent to the Tuolumne River and not require a permit from the CSLC.

City of Ceres & City of Modesto: Representatives from the Cities of Ceres and Modesto have been involved with various PDT meetings throughout and have provided details regarding the City's planning efforts.

McHenry Museum, Ceres Historical Society, and Turlock Irrigation District: A request for information was both mailed and emailed to the McHenry Museum in the City of Modesto and the Ceres Historical Society in the City of Ceres on 11 June 2019. A response was received on 12 June 2019 from a volunteer with the McHenry Museum. The volunteer recommended

contacting the Ceres Historic Society and the Turlock Irrigation District (T.I.D) office in Turlock for further information regarding historic resources within the APE. No response was received from the Ceres Historical Society after three attempts. The last letter was returned by the Post Office as undeliverable. T.I.D. provided helpful information both verbally and in written form during and after the completion of fieldwork.

National Marine Fisheries Service: An official list of federal-listed species, designated critical habitat, and Essential Fish Habitat areas present in the Ceres and Riverbank quads was originally generated on 7 December 2017, and updated on 17 July 2019, 26 September 2019, 30 January 2020, and 11 May 2020 from the NMFS West Coast Region California Species List November/December 2016 KMZ layer in Google Earth. The database-generated list states that federal-listed CCV steelhead, CCV steelhead Critical Habitat, and Chinook Salmon EFH could occur in the Project site.

The Department initiated Section 7 consultation with NMFS on 9 June 2020 for CCV steelhead and CCV steelhead Critical Habitat. In a Biological Opinion dated 8 January 2021 NMFS concurred with the findings of the Biological Assessment. The Biological Opinion concludes that it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of CCV steelhead or destroy or adversely modify CCV steelhead designated critical habitat. The NFMS Biological Opinion also concludes that the Project will adversely affect Pacific salmon EFH in the action area and included conservation recommendations, including adoption of the ESA reasonable and prudent measures and associated terms and conditions from the biological opinion. The Project will adhere to all Reasonable and Prudent Measures and Terms and Conditions of the NMFS Biological Opinion dated 8 January 2021.

Native American Heritage Commission (NAHC): A Sacred Lands File (SLF) search request was submitted to the NAHC on 15 September 2017. The NAHC responded on 4 October 2017 stating that there are no known sacred lands within a half-mile radius of the Project APE. The NAHC provided a list of six Native American tribes or individuals to be contacted for more information regarding the potential for tribal resources within the vicinity of the APE.

The Tuolumne Me-Wuk Tribal Council, responded by letter on 11 June 2019, stating that the tribe has no concerns regarding the Project at this time, but would like to be contacted in the event of any inadvertent discoveries. Additional attempts at contact were made by email or phone on 26 June 2019 and 5 July 2019 with no responses.

Tribal Governments: Combined Assembly Bill 52/Section 106 consultation letters composed by the County were sent on 4 June 2019, requesting any information related to tribal resources or heritage sites within or adjacent to the APE. Groups contacted included the Calaveras Band of Mi-Wuk, Indians, the California Valley Miwok Tribe, the North Valley Yokuts Tribe, the Southern Sierra Miwuk Nation, the Tule River Indian Tribe, and the Tuolumne Band of Me-Wuk Indians.

U.S. Army Corps of Engineers, Sacramento District, Regulatory Division: An Aquatic Resources Delineation Verification Request was submitted to the USACE Sacramento District on 4 May 2020. The USACE responded via email to request additional information on 8 May 2020. The additional information was provided to the Corps on 8 May 2020. On 10 June 2020 the Corps emailed and stated that they have assigned the project 'SPK-2020-00456 as a project

number' and provided a revised ORM AR Upload Sheet. On 18 June 2020 the Corps verified the Aquatic Resources Delineation stating "… *we concur with your aquatic resources delineation for the site, which consists of approximately 7.26-acres of other waters and 0.12-acre wetlands*…" The Project would need Section 404 authorization.

U.S. Environmental Protection Agency/Federal Highway Administration: Concurrence of air quality conformity was provided by StanCOG's interagency consultation partners, which include the U.S. EPA and FHWA. A technical memorandum summarizing the Air Quality Study Report findings was initially circulated on 11 and 17 October 2019. EPA requested additional information regarding the breakdown of heavy trucks. The technical information regarding the breakdown of heavy trucks was submitted to the interagency consultation partners on 19 November 2019. StanCOG circulated a second memo to the Interagency Consultation (IAC) Partners on 28 April 2020 requesting concurrence from both the EPA and the FHWA that the "Faith Home Road-Hatch Road to Garner Road 4-Lane Expressway Project," CTIPS ID 214-0000-0695 is not a Project of Air Quality Concern (POAQC). Concurrence was received from the EPA on 30 April 2020 and the FHWA on 11 May 2020, concluding that the proposed Project is not a POAQC. Details of the air quality conformity analysis are included in Section 2.2.6, Air Quality.

U.S. Fish and Wildlife Service: An official letter and list were originally obtained from the USFWS, Sacramento Field Office on 13 January 2016 and updated on 17 July 2019, 26 September 2019, 30 January 2020, and 11 May 2020. The list identifies federal-listed, candidate, and proposed species and critical habitat that potentially occur in, or could be affected by the Project.

The Department initiated Section 7 consultation with USFWS on 9 June 2020 for vernal pool fairy shrimp (*Branchinecta lynchi*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and vernal pool tadpole shrimp (*Lepidurus packardi*). In a letter dated 1 December 2020 USFWS concurred with the findings of the Biological Assessment. The letter concludes that the Faith Home Road and Garner Road Expressway Project, as proposed, is not likely to jeopardize the continued existence of the Valley elderberry longhorn beetle, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The Service reached this conclusion because the project-related effects to the species, when added to the environmental baseline and analyzed in consideration of all potential cumulative effects, will not rise to the level of precluding recovery or reducing the likelihood of survival of the species.

4.3 Public Participation

A public workshop was held on 11 December 2018 from 6:30 to 9:00PM in the Ceres City Council Chambers. Approximately 200 invitation postcards were mailed out to property owners within 0.25 mile of the Project area. A total of 14 people signed the attendance sheet. At the December event, the community was given the opportunity to voice their questions and concerns, and to provide comments on the Project. No written comments were received at the meeting.

The Project is listed on the County website at http://www.stancounty.com/publicworks/projects.shtm. The webpage for the Project provides information on the environmental process and the anticipated completion date.

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Chapter 6 Distribution List

The distribution list represents the public officials, local agencies, and interested parties that were sent copies of the environmental document or a copy of the Notice of Availability/Notice of Intent.

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P.O. Box 642
Modesto, CA 95353

Chris Ricci (City Council)
City of Modesto
P.O. Box 642
Modesto, CA 95353

Elisabeth Hahn
Stanislaus Council of Governments
1111 I Street, Suite 308
Modesto, CA 95354

Dave Brown
Modesto Irrigation District
1231 11th St
Modesto, CA 95354

Isael Ojeda
Stanislaus Council of Governments
1111 I Street, Suite 308
Modesto, CA 95354

Linda Ryno (Vice Mayor)
City of Ceres
2220 Magnolia Street
Ceres, CA 95307

Tom Westbrook (City Manager)
City of Ceres
2220 Magnolia Street
Ceres, CA 95307

George Carr (Mayor)
City of Hughson
PO Box 9
Hughson, CA 95326

Ramon Bawanan (City Council)
City of Hughson
PO Box 9
Hughson, CA 95326

Jose Vasquez (Public Works Superintendent)
City of Hughson
PO Box 9
Hughson, CA 95326

Rosa Escutia-Braaton (City Council)
City of Modesto
P.O. Box 642
Modesto, CA 95353

Bill Zoslocki (City Council)
City of Modesto
P.O. Box 642
Modesto, CA 95353

Manjit Sekhon
Modesto Irrigation District
1231 11th St
Modesto, CA 95354

Todd Troglin
Turlock Irrigation District
333 East Canal Drive
Turlock, CA 95381

Rosa Park
Stanislaus Council of Governments
1111 I Street, Suite 308
Modesto, CA 95354

Bret Silveira (City Council)
City of Ceres
2220 Magnolia Street
Ceres, CA 95307

Jeremy Damas (Public Works Director)
City of Ceres
2220 Magnolia Street
Ceres, CA 95307

Harold Hill (Mayor Pro Tem)
City of Hughson
PO Box 9
Hughson, CA 95326

Merry Meyhew (City Manager)
City of Hughson
PO Box 9
Hughson, CA 95326

Peter Rei (City Engineer)
City of Hughson
PO Box 9
Hughson, CA 95326

Tony Madrigal (City Council)
City of Modesto
P.O. Box 642
Modesto, CA 95353

Jenny Kenoyer (City Council)
City of Modesto
P.O. Box 642
Modesto, CA 95353

David Wright (City Council)
City of Modesto
P.O. Box 642
Modesto, CA 95353

Vickey Dion (City Engineer)
City of Modesto
P.O. Box 642
Modesto, CA 95353

Vito Chiesa (Chairman)
Stanislaus County
1010 10th Street, Ste 6500
Modesto, CA 95354

Channce Condit (Supervisor)
Stanislaus County
1010 10th Street, Ste 6500
Modesto, CA 95354

Raul Mendez (Asst. Executive Officer)
Stanislaus County
1010 10th Street, Ste 6500
Modesto, CA 95354

David Garcia (Superintendent)
Empire Unified School District
116 North McClure Road
Modesto, CA 95357

Joseph Lopez (City Manager)
City of Modesto
P.O. Box 642
Modesto, CA 95353

Jaylen French (Director of Comm. & Econ Development)
City of Modesto
P.O. Box 642
Modesto, CA 95353

Terry Withrow (Vice Chairman)
Stanislaus County
1010 10th Street, Ste 6500
Modesto, CA 95354

David Leamon (Director of Public Works)
Stanislaus County
1716 Morgan Road
Modesto, CA 95358

Scott Siegel (Superintendent)
Ceres Unified School District
2503 Lawrence St.
Ceres, CA 95307

Bill Sandhu (Director of Public Works)
City of Modesto
P.O. Box 642
Modesto, CA 95353

Buck Condit (Supervisor)
Stanislaus County
1010 10th Street, Ste 6500
Modesto, CA 95354

Mani Grewal (Supervisor)
Stanislaus County
1010 10th Street, Ste 6500
Modesto, CA 95354

Jody Hays (Chief Executive Officer)
Stanislaus County
1010 10th Street, Ste 6500
Modesto, CA 95354

Sara Noguchi (Superintendent)
Modesto City Schools
426 Locust Street
Modesto, CA 95351

Law Enforcement/ Fire Protection/ First Responder

Ceres Police Department
2727 3rd St
Ceres, CA 95307

Modesto Fire Department
Administration Office
737 Airport Way
Modesto, CA95354

Stanislaus Consolidated FPD
Administrative Headquarters
3324 Topeka St
Riverbank, CA 95367

Modesto Police Department
610 10th St
Modesto, CA 95354

Ceres Fire Department
Fire Station Number 15
2755 Third Street
Ceres, CA 95307

Keyes Fire Protection District
P.O. Box 577
Keyes CA 95328

Stanislaus County Sheriff
250 East Hackett Road
Modesto, CA

Hughson Fire Protection District
2316 3rd Street
Hughson, CA 95326

Local Business

Jared Martin
Modesto & Empire Traction Co.
P.O. Box 3106
Modesto, CA 95353

Modesto & Empire Traction Co.
P.O. Box 3106
Modesto, CA 95353

Dillon E. Olvera
Beard Land Improvement Co.
P.O. Box 1113
Modesto, CA 95353

Gilton Solid Waste/ Resource Recovery
755 S. Yosemite Avenue.
Oakdale, CA 95361

Bear Creek Land Company LP
3700 Finch Road
Modesto, CA 95357

Solar Cool Properties III
3800 Finch Road
Modesto, CA 95357

Unknown Owners
P O Box 57
Hughson, CA 95326

GMR Ranches LLC
5114 Swanson Road
Denair, CA 95316

Turlock Irrigation District
P O Box 949
Turlock, CA 95381

Miller Harold O & Sons
PO Box 57
Hughson, CA 95326

Butterfly LLC
11904 Andretti Avenue
Bakersfield, CA 93312

Salter Farms Inc
PO Box 618
Hughson, CA 95326

Residents/ General Public

Gloria Lewis
1747 Faith Home Road
Ceres, CA 95307

Susan Bakus
3868 Podocarpus Drive
Ceres, CA 95307

George Samuel
1808 Somerby Lane
Ceres, CA 95307

Ray Dias
4226 Tully Road
Hughson, CA 95326

Henry Dickson
1832 Murrietta Lane
Modesto, CA 95355

Marty & Karen Cox
1604 Dusty Miller Lane
Ceres, CA. 95307

Georgia Karabinis
5600 Anada Ct
Salida, CA 95368

Lopez Jose Conservato
1754 Spokane St
Modesto, CA 95358

Arturo Vega & Marie Hernandez
1516 Dusty Miller Lane
Ceres, CA 95307

Mandeep Singh
1520 Dusty Miller Lane
Ceres, CA 95307

Crystal Garcia
1524 Dusty Miller Lane
Ceres, CA 95307

Gurba Kaur
1528 Dusty Miller Lane
Ceres, CA 95307

Sharon Sakakihara
1532 Dusty Miller Lane
Ceres CA, 95307

Jose Salazar
1600 Dusty Miller Lane
Ceres, CA 95307

Martin & Karen Cox
1604 Dusty Miller Lane
Ceres, CA 95307

Hardev & Kaur Harjit Singh
1608 Dusty Miller Lane
Ceres CA 95307

Virender Kaur Sidhu
1612 Dusty Miller Lane
Ceres, CA 95307

Palvinderpal & Gurbax Sandhu
1616 Dusty Miller Lane
Ceres, CA 95307

Elmer & Nida Casing
1620 Dusty Miller Lane
Ceres, CA 95307

Juan & Abigail Pulido
1624 Dusty Miller Lane
Ceres, CA 95307

Nashat & Fatima Odeh
1628 Dusty Miller Lane
Ceres, CA 95307

Singh Manjinder
1632 Dusty Miller Lane
Ceres, CA 95307

Jon Buenaventura
1636 Dusty Miller Lane
Ceres, CA 95307

Helen Erwin
1904 Clarendon Ct
Ceres, CA 95307

Leonardo Campos
1905 Clarendon Ct
Ceres, CA 95307

Steve & Janet Stanhope
1912 Clarendon Ct
Ceres, CA 95307

Lucio & Irene Perez
1908 Clarendon Ct
Ceres, CA 95307

Wyatt Dirk L & Heather A
4761 Service Road
Ceres, CA 95307

Sarabjeet & Lally Renuka Singh
1901 Clarendon Ct
Ceres, CA 95307

Nadra & Justin Silva
3922 Eau Claire Avenue
Ceres, CA 95307

Svetiana A David-Carter
3934 Eau Claire Avenue
Ceres, CA 95307

Baldev & Kaur Kamaljit Singh
3928 Eau Claire Avenue
Ceres, CA 95307

Oscar Acosta
3910 Eau Claire Avenue
Ceres, CA 95307

Maria Garcia
3916 Eau Claire Avenue
Ceres, CA 95307

Phillip Naber
3904 Eau Claire Avenue
Ceres, CA 95307

Aarti & Sudish Jattan
3880 Eau Claire Avenue
Ceres, CA 95307

Kenneth & Beatriz Cadena
3874 Eau Claire Avenue
Ceres, CA 95307

James Sanchez
3868 Eau Claire Avenue
Ceres, CA 95307

Jose & Fausta Garcia
3854 Eau Claire Avenue
Ceres, CA 95307

Samuel & Solinna Vorn
3846 Eau Claire Avenue
Ceres, CA 95307

Sophal Rorn
3832 Eau Claire Avenue
Ceres, CA 95307

Martin & Gabriela Rodriguez
3818 Eau Claire Avenue
Ceres, CA 95307

Manjinder Pannu
3810 Eau Claire Avenue
Ceres, CA 95307

Victor Roman Barajas
1900 Clarendon CT
Ceres, CA 95307

Sukwinder Singh & Mandeep Mann
1816 Somersby Lane
Ceres, CA 95307

Bros Khatri
1812 Somersby Lane
Ceres, CA 95307

George & Linda Samuel
1808 Somersby Lane
Ceres, CA 95307

Harpreet Singh Billing
1796 Somersby Lane
Ceres, CA 95307

Bros Khatri
1764 Somersby Lane
Ceres, CA 95307

Margarita Maldonado
1784 Somersby Lane
Ceres, CA 95307

Alejandro & Ramos Alejandra Olide
1742 Somersby Lane
Ceres, CA 95307

Margarito Gutierrez
1720 Somersby Lane
Ceres, CA 95307

Lizette Garcia
3847 Eau Claire Avenue
Ceres, CA 95307

Andrea Vivas Botero
3855 Eau Claire Avenue
Ceres, CA 95307

Tai Chhoeng
3869 Eau Claire Avenue
Ceres, CA 95307

Rodolfo Villicna
3875 Eau Claire Avenue
Ceres, CA 95307

Lakhbir & Mand Mandeep Singh
3881 Eau Claire Avenue
Ceres, CA 95307

Ricky Michael Akins
3887 Eau Claire Avenue
Ceres, CA 95307

Baldomero & Lombera Ana Bedolla
3893 Eau Claire Avenue
Ceres, CA 95307

Jorge & Rachel Guerrero
3905 Eau Claire Avenue
Ceres, CA 95307

Bobby Torres Cabling
3911 Eau Claire Avenue
Ceres, CA 95307

Michael King
3917 Eau Claire Avenue
Ceres, CA 95307

Jose Mendoza
3923 Eau Claire Avenue
Ceres, CA 95307

Leobardo & Angelica Martinez
3929 Eau Claire Avenue
Ceres, CA 95307

Gustavo & Josefina Villalon
3935 Eau Claire Avenue
Ceres, CA 95307

Efrain Gonzalez-Cardenas
1817 Somersby Lane
Ceres, CA 95307

Cesar & Deysi Camarillo
1813 Somersby Lane
Ceres, CA 95307

Elidia Garcia
1809 Somersby Lane
Ceres, CA 95307

Luis Ramon Alvarez Ortiz
3934 Gossamer Way
Ceres, CA 95307

Jaime Lopez
3928 Gossamer Way
Ceres, CA 95307

Kabal Singh & Jasbir Kaur Bains
3922 Gossamer Way
Ceres, CA 95307

Ruth Vera
3916 Gossamer Way
Ceres, CA 95307

Salvador & Tinoco Maria Elena Ramirez
3910 Gossamer Way
Ceres, CA 95307

Russell E Hopkins
3904 Gossamer Way
Ceres, CA 95307

Jose Saul & Martha Vargas Martinez
3892 Gossamer Way
Ceres, CA 95307

Enrique O Hernandez
3886 Gossamer Way
Ceres, CA 95307

Andruos Odisho Oshana
3880 Gossamer Way
Ceres, CA 95307

Harjit Singh
3874 Gossamer Way
Ceres, CA 95307

Bairaj Singh & Kaur Harpreet Randhawa
3868 Gossamer Way
Ceres, CA 95307

Ben J & Yu Mary L Liang
3854 Gossamer Way
Ceres, CA 95307

Rogelio Sanchez
3846 Gossamer Way
Ceres, CA 95307

Pablo & Gema A Ramirez
1817 San Moritz Lane
Ceres, CA 95307

Jose S & Martha A Serrato
1813 San Moritz Lane
Ceres, CA 95307

Armando & Emilita Gomez
1809 San Moritz Lane
Ceres, CA 95307

Alicia Vasquez
1797 San Moritz Lane
Ceres, CA 95307

Chamreoun Keo
3819 Gossamer Way
Ceres, CA 95307

Jose & Maria Arellano
3833 Gossamer Way
Ceres, CA 95307

Dien & Loi Anh Thuc Nguyen
3847 Gossamer Way
Ceres, CA 95307

Jose Fernandez & Madeleine Ortiz Otero
3855 Gossamer Way
Ceres, CA 95307

Javier Camarillo
3869 Gossamer Way
Ceres, CA 95307

Jarod & Shannon King
3875 Gossamer Way
Ceres, CA 95307

Martin Ocegueda
3923 Gossamer Way
Ceres, CA 95307

Cristina Galvez
3887 Gossamer Way
Ceres, CA 95307

Enrique M & Erendira Martinez
3893 Gossamer Way
Ceres, CA 95307

Ruben Solis
3905 Gossamer Way
Ceres, CA 95307

Martin Cortes
3917 Gossamer Way
Ceres, CA 95307

Gabrielle F Fernandez
3911 Gossamer Way
Ceres, CA 95307

Sharanjeet K & Harvindar Singh
3929 Gossamer Way
Ceres, CA 95307

Clinton & Megan Goblirsch
3935 Gossamer Way
Ceres, CA 95307

Angelo J & Luz E Acosta
3941 Gossamer Way
Ceres, CA 95307

Khun Kewal Singh & Kulwant Kaur Khun
3940 Podocarpus Drive
Ceres, CA 95307

Satinder K Bahia
3934 Podocarpus Drive
Ceres, CA 95307

Salvador & Maria L Villasenor
3928 Podocarpus Drive
Ceres, CA 95307

Sukhchain Singh Gill
3922 Podocarpus Drive
Ceres, CA 95307

Michael L Toccalini
3916 Podocarpus Drive
Ceres, CA 95307

Abraham & Silvia M Jaimes
3910 Podocarpus Drive
Ceres, CA 95307

Donald D Lal
3904 Podocarpus Drive
Ceres, CA 95307

Miguel R & Martha Jimenez
3892 Podocarpus Drive
Ceres, CA 95307

Hector L & Nilda A Velazquez
3886 Podocarpus Drive
Ceres, CA 95307

Samantha Quezada
3874 Podocarpus Drive
Ceres, CA 95307

Susan Ann Bakus
3868 Podocarpus Drive
Ceres, CA 95307

Bernardo Sanchez
3846 Podocarpus Drive
Ceres, CA 95307

Narinderpal S & Rajwant K Sandhu
3854 Podocarpus Drive
Ceres, CA 95307

Narciso & Pilar Vigil
3832 Podocarpus Drive
Ceres, CA 95307

Ramiro Cabrera
3818 Podocarpus Drive
Ceres, CA 95307

Ismael & Rosa Ontiveros
3810 Podocarpus Drive
Ceres, CA 95307

Fahmi Alsumeri
1709 Blue Lane
Ceres, CA 95307

Pedro Farias Carrasco
3935 Podocarpus Drive
Ceres, CA 95307

Francisco & Esperanza Castillo
3847 Podocarpus Drive
Ceres, CA 95307

Aida G Puducay
3881 Podocarpus Drive
Ceres, CA 95307

Issa & Nadera Seoud
1716 Blue Lane
Ceres, CA 95307

Gaganpreet Kaur
3941 Podocarpus Drive
Ceres, CA 95307

Fredrick J Harper
1715 Blue Lane
Ceres, CA 95307

Ruben Alvarez
3875 Podocarpus Drive
Ceres, CA 95307

Richard Hasson Hanley
3833 Podocarpus Drive
Ceres, CA 95307

Alex & Alison Buenaventura
3934 Hyacinth Drive
Ceres, CA 95307

Lawrence A & Elmira E Paulos
3886 Hyacinth Drive
Ceres, CA 95307

Laxmi & Dalwara S Shoker
3880 Hyacinth Drive
Ceres, CA 95307

Satnam Singh & Jaswinder Kaur Dosanjh
3846 Hyacinth Drive
Ceres, CA 95307

Sandra Patricia & Felipe Salcedo Ochoa
3810 Hyacinth Drive
Ceres, CA 95307

Rajvinder Sandhu
3935 Hyacinth Drive
Ceres, CA 95307

Eric & Tina M Rodriguez
3953 Podocarpus Drive
Ceres, CA 95307

Miguel Melgoza-Vasquez
3929 Podocarpus Drive
Ceres, CA 95307

Hameed Alfareh
3893 Podocarpus Drive
Ceres, CA 95307

Julio C Zamora Magana
3855 Podocarpus Drive
Ceres, CA 95307

Jesus & Adriana Mejia
3819 Podocarpus Drive
Ceres, CA 95307

Shide & Xuan Wei Liu
3928 Hyacinth Drive
Ceres, CA 95307

Ravin & Sharda Devi Sen
3904 Hyacinth Drive
Ceres, CA 95307

Harish & Raman Soni
3874 Hyacinth Drive
Ceres, CA 95307

Gurvinder Singh
3832 Hyacinth Drive
Ceres, CA 95307

Guillermo & Maria Garcia Ochoa
3923 Hyacinth Drive
Ceres, CA 95307

Qun & Hu Yan Gu
3893 Hyacinth Drive
Ceres, CA 95307

Robert & Lori Wrachford
3947 Podocarpus Drive
Ceres, CA 95307

Luis Pena
1710 Blue Lane
Ceres, CA 95307

Robert & Padilla Norma Varela
3887 Podocarpus Drive
Ceres, CA 95307

Nachhatar & Kaur Kuldip Singh
3869 Podocarpus Drive
Ceres, CA 95307

Ismael & Minerva G Ontiveros
3811 Podocarpus Drive
Ceres, CA 95307

Lyly & Ratsamy Chanthanouvong
3922 Hyacinth Drive
Ceres, CA 95307

Salvador & Josefina Molina
3892 Hyacinth Drive
Ceres, CA 95307

Anil Nath
3868 Hyacinth Drive
Ceres, CA 95307

Martha A Ramirez
3818 Hyacinth Drive
Ceres, CA 95307

Gui Shuang & Zhao Xiping Zhu
3905 Hyacinth Drive
Ceres, CA 95307

Ciro & Margarita Guzman
1635 Dusty Miller Lane
Ceres, CA 95307

Luis & Campos Patricia Alvarez Haro
3929 Hyacinth Drive
Ceres, CA 95307

Mario A Quintanilla
3887 Hyacinth Drive
Ceres, CA 95307

Victor R & Cristina Alvarez
3881 Hyacinth Drive
Ceres, CA 95307

Jose M & Alicia A Padilla
3875 Hyacinth Drive
Ceres, CA 95307

Luis J & Florenseta C Diaz
3847 Hyacinth Drive
Ceres, CA 95307

Paresh B & Minaben Gandhi
3833 Hyacinth Drive
Ceres, CA 95307

Victor R & Cheryle Pickle
3819 Hyacinth Drive
Ceres, CA 95307

Avtar Singh & Surinder Pal Kaur Gill
3811 Hyacinth Drive
Ceres, CA 95307

Jaswinder & Kaur Kirandeep Singh
1631 Dusty Miller Lane
Ceres, CA 95307

Jose M & Alicia A Padilla
3875 Hyacinth Drive
Ceres, CA 95307

Luis & Florenseta Diaz
3847 Hyacinth Drive
Ceres, CA 95307

Paresh & Minaben Gandhi
3833 Hyacinth Drive
Ceres, CA 95307

Victor R & Cheryle Pickle
3819 Hyacinth Drive
Ceres, CA 95307

Avtar Singh & Surinder Pal Kaur Gill
3811 Hyacinth Drive
Ceres, CA 95307

Jaswinder & Kaur Kirandeep Singh 1631 Dusty Miller Lane
Ceres, CA 95307

Omar Aguilar
1627 Dusty Miller
Lane Ceres, CA 95307

Yvonne Naranjo
3928 Kiwi Drive
Ceres, CA 95307

Harbans S Khatra
3922 Kiwi Drive
Ceres, CA 95307

John Manuel Diaz
3916 Kiwi Drive
Ceres, CA 95307

Lilia Fernandez
3904 Kiwi Drive
Ceres, CA 95307

Brian & Ariana Bowen
3892 Kiwi Drive
Ceres, CA 95307

Osvaldo R Hernandez
3886 Kiwi Drive
Ceres, CA 95307

Talwinder & Jaswinder K Singh
3880 Kiwi Drive
Ceres, CA 95307

Veronica Trujillo
3874 Kiwi Drive
Ceres, CA 95307

Juan M & Blanca Ochoa
3846 Kiwi Drive
Ceres, CA 95307

Joseph G & Rosemarie Layton
3832 Kiwi Drive
Ceres, CA 95307

Tina Gill
3818 Kiwi Drive
Ceres, CA 95307

Jaylene A Buenaventura
3810 Kiwi Drive
Ceres, CA 95307

Paul S & Jaswinder Bains
1619 Dusty Miller Lane
Ceres, CA 95307

Sandeep Singh
1620 Water Lily Lane
Ceres, CA 95307

David K & Sara A Tank
1619 Water Lily Lane
Ceres, CA 95307

Paul Raj 1620
Mandevilla Lane
Ceres, CA 95307

Guolin & Liao Huiping Cheng
1619 Mandevilla Lane
Ceres, CA 95307

Tripjeet & Charanjit Birring
1620 Fiddleleaf Lane
Ceres, CA 95307

Heang & Chen Pholy Ngan
1615 Dusty Miller Lane
Ceres, CA 95307

Jose & Guadalupe Gonzalez
1616 Water Lily Lane
Ceres, CA 95307

Guadalupe & Maria Serrano
1615 Water Lily Lane
Ceres, CA 95307

Surinder & Kaur Satinder Singh
1616 Mandevilla Lane
Ceres, CA 95307

Dalvir Khun-Khun
1615 Mandevilla Lane
Ceres, CA 95307

Kuldeep Jagpal
1616 Fiddleleaf Lane
Ceres, CA 95307

Linda Keo
1611 Dusty Miller Lane
Ceres, CA 95307

Ramon Zavala
1612 Water Lily Lane
Ceres, CA 95307

Bharpur & Kaur Kulwinder Singh
1611 Water Lily Lane
Ceres, CA 95307

Mandeep & Grewal Parminder Kaur Singh
1612 Mandevilla Lane
Ceres, CA 95307

Sumanjeet K & Harinder Sahi
1611 Mandevilla Lane
Ceres, CA 95307

Marian Schrock
1612 Fiddleleaf Lane
Ceres, CA 95307

Hensworth & Nortickle Weaver
1607 Dusty Miller Lane
Ceres, CA 95307

Hermiz S Hermiz
1608 Water Lily Lane
Ceres, CA 95307

Iqbal Singh Johal
1607 Water Lily Lane
Ceres, CA 95307

Guishuang & Zhao Xi Ping Zhu
1608 Mandevilla Lane
Ceres, CA 95307

Gerardo & Rocio Madelein Barajas
1607 Mandevilla Lane
Ceres, CA 95307

Jimmy & Zhu Sharon Zheng
1608 Fiddleleaf Lane
Ceres, CA 95307

Antonio Zamora
1603 Dusty Miller Lane
Ceres, CA 95307

Jodh & Kaur Jasbir Sekhon
1604 Water Lily Lane
Ceres, CA 95307

Charanjit & Tripjeet Birring
1603 Water Lily Lane
Ceres, CA 95307

Eloy Bugarin
1604 Mandevilla Lane
Ceres, CA 95307

Yugraj Singh
1603 Mandevilla Lane
Ceres, CA 95307

Mikie R & Madrigal Olivia Rivera
1604 Fiddleleaf Lane
Ceres, CA 95307

Ajmer Singh
1599 Dusty Miller Lane
Ceres, CA 95307

Jorge & Ruth Flores
1600 Water Lily Lane
Ceres, CA 95307

Manjinder Pattar
1599 Water Lily Lane
Ceres, CA 95307

Hardev & Kaur Mandeep Singh
1600 Mandevilla Lane
Ceres, CA 95307

Norberto X Devargas
1599 Mandevilla Lane
Ceres, CA 95307

Baljit & Kaur Kamaldip Singh 1600 Fiddleleaf Lane Ceres, CA 95307

Leonilo Hermel D & Soliel Marianne D Flores 1531 Dusty Miller Lane
Ceres, CA 95307

Tarsem Singh & Kaur Manjit Sohal
1532 Water Lily Lane
Ceres, CA 95307

Gursharan Takher
1531 Water Lily Lane
Ceres, CA 95307

Resham Kaur
1532 Mandevilla Lane
Ceres, CA 95307

Samong Phommaviseth
1531 Mandevilla Lane
Ceres, CA 95307

Jose & Juanita Padilla
1532 Fiddleleaf Lane
Ceres, CA 95307

Antonio & Julie Magana
1527 Dusty Miller Lane
Ceres, CA 95307

Nirmal S Dhariwal
1528 Water Lily Lane
Ceres, CA 95307

Samantha Phongsa
1527 Water Lily Lane
Ceres, CA 95307

Kara & Jeremiah Stoker
1528 Mandevilla Lane
Ceres, CA 95307

Sophal Rorn
1527 Mandevilla Lane
Ceres, CA 95307

Jose F Garcia
1528 Fiddleleaf Lane
Ceres, CA 95307

Gaganpreet Kaur
3941 Bougainvillea Drive
Ceres, CA 95307

Harmandeep & Kaur Manpreet Singh
3935 Bougainvillea Drive
Ceres, CA 95307

Christopher & Michelle Borges
3929 Bougainvillea Drive
Ceres, CA 95307

Saddam Nasser
3923 Bougainvillea Drive
Ceres, CA 95307

Manjit & Gurvinder Grewal
3911 Bougainvillea Drive
Ceres, CA 95307

Jose R & Isabel C Camarena
3905 Bougainvillea Drive
Ceres, CA 95307

Rigoberto H Lua
3893 Bougainvillea Drive
Ceres, CA 95307

Jesus Zavala
3887 Bougainvillea Drive
Ceres, CA 95307

Karen & Harry Bhatti
3881 Bougainvillea Drive
Ceres, CA 95307

Piara Birring
3875 Bougainvillea Drive
Ceres, CA 95307

Media

Jeff Benziger
Ceres Courier
121 S Center St.
Turlock, CA 95380

Appendix A: Title VI Policy Statement, signed by the Director

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DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
FAX (916) 653-5776
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

April 2018

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *"No person in the United States shall, on the ground 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."*

Related federal statutes and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone (916) 324-8379, TTY 711, email Title.VI@dot.ca.gov, or visit the website www.dot.ca.gov.

LAURIE BERMAN
Director

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

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Appendix B: Summary of Relocation Benefits

California Department of Transportation Relocation Assistance Program
Relocation Assistance Advisory Services

DECLARATION OF POLICY

"The purpose of this title is to establish a ***uniform policy for fair and equitable treatment*** of persons displaced as a result of federal and federally assisted programs in order that such persons ***shall not suffer disproportionate injuries*** as a result of programs designed for the benefit of the public as a whole."

The Fifth Amendment to the U.S. Constitution states, "No Person shall…be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation." The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations (CFR) Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

FAIR HOUSING

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require the Department to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displace in order to see that all payments and benefits are fully utilized and that all regulations are observed, thereby avoiding the possibility of displaces jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations and also are given a detailed explanation of the Caltrans Relocation Assistance Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Department relocation advisor.

RELOCATION ASSISTANCE ADVISORY SERVICES

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, the Department will provide relocation advisory assistance to any person, business, farm, or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. The

Department will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for sale and rental units that are “decent, safe, and sanitary.” Nonresidential displacees will receive information on comparable properties for lease or purchase (for business, farm, and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning federal and state assisted housing programs and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the Project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable “decent, safe, and sanitary” replacement dwelling, available on the market, is offered to them by the Department.

RESIDENTIAL RELOCATION PAYMENTS

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who move into the displacement property after the initiation of negotiations must wait until the Department obtains control of the property in order to be eligible for relocation payments.

Purchase Differential

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 90 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling

is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate.

Rent Differential

Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by the Department prior to the date of the initiation of negotiations may qualify to receive a rent differential payment. This payment is made when the Department determines that the cost to rent a comparable "decent, safe, and sanitary" replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the *Down Payment* section below. To receive any relocation benefits, the displaced person must buy or rent and occupy a "decent, safe and sanitary" replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

The down payment option has been designed to aid owner-occupants of less than 90 days and tenants in legal occupancy prior to the Department's initiation of negotiations. The one-year eligibility period in which to purchase and occupy a "decent, safe and sanitary" replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 CFR 24) contain the policy and procedure for implementing the Last Resort Housing Program on Federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

After the initiation of negotiations, the Department will within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced.
- Specific arrangements needed to accommodate any family member(s) with special needs.
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family.
- Preferences in area of relocation.
- Location of employment or school.

NONRESIDENTIAL RELOCATION ASSISTANCE

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for

certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms, and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items acquired in the right-of-way contract may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to $2,500, for reasonable expenses actually incurred.

Reestablishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to $25,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses that meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than $1,000 nor more than $40,000.

ADDITIONAL INFORMATION

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other law, ***except*** for any federal law providing local "Section 8" Housing Programs.

Any person, business, farm or nonprofit organization that has been refused a relocation payment by the Department relocation advisor or believes that the payment(s) offered by the agency are inadequate may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a public project. A list of ineligible expenses can be obtained from the Department's Division of Right of Way and Land Surveys. California's law and the federal regulations covering relocation

assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

Caltrans Relocation Assistance Program website https://dot.ca.gov/programs/right-of-way/relocation-assistance-program

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Appendix C: Avoidance, Minimization and/or Mitigation Summary

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List of Project Environmental Commitments

DIST-CO-RTE: 10-STA-Stanislaus County Department of Public Works STPL - 5938(240)

EA/Project ID.: STPL-5938 (240)

Project Description: Establish a new road connection between Faith Home Road and Garner Road in Stanislaus County immediately adjacent to the City of Modesto and City of Ceres.

NEPA Avoidance/ Minimization and CEQA Mitigation Measures

Parks/ Recreation: Measure REC-1 (Protected Channel Corridor)

- *During final design, the protected channel corridor will be designed in consultation with the State Lands Commission as applicable. The design will provide for safe passage horizontally and vertically and include floating fender barriers approximately 50 feet upstream to help direct boats through the channel, as well as adequate netting under construction area to prevent debris from reaching the Tuolumne River. If temporary closure of the Tuolumne River in the Project area is needed during construction of the temporary protected channel corridor signage will be posted at the closest upstream and downstream launch/ pull out facility notifying users. The signage will in place a minimum of 7 days prior to any temporary river closure in the Project area.*

Farmland: Measure AG-1 (Williamson Act Parcel 018-062-002)

- Acquisition of ROW from any parcel enrolled in an active Williamson Act Contract will comply with the noticing requirements of the 2014 (amended 2016) California Department of Conservation Public Acquisition Notification Procedures 'A Step by Step Guide'.

Transportation/ Traffic: Measure TRAFFIC-1

- **Claus Road and Scenic Drive Intersection:** The impact under construction year (2025) conditions could be mitigated by providing a second northbound left turn lane. For design year (2045) conditions, the mitigation measure for Build Alternative Phase 1 is the same as under construction year (2025) conditions. For Phase 2, the design year (2045) mitigation measure should include converting the southbound right turn lane to a shared through/right turn lane.

  The intersection was recently modified to accommodate a Class IV bicycle facility on the east side of Claus Road. With this modification, the second northbound left turn lane was removed. To add the lane back in would only require modifying of the intersection's south leg. For the addition of the third southbound lane for Phase 2, the free eastbound right turn movement would become controlled by the signal, but both the north and south legs of the intersection can accommodate the third southbound lane without widening. The 2018 RTP/SCS project list does not contain a project that covers this location.

Modifying the intersection should be listed as a future candidate project for the next RTP/SCS project list.

- **Mitchell Road/El Vista Avenue and SR 132 Intersection:** The impact under construction year (2025) conditions could be mitigated by providing a second northbound left turn lane. For design year (2045) conditions, the impact could be mitigated by providing a second northbound left turn lane, a southbound right turn pocket lane of 150 feet and a westbound right turn pocket lane of 150 feet.

  The right-of-way for Mitchell Road south of the railroad crossing is wide enough to accommodate widening to provide a second northbound left turn lane. However, the crossing and related signals and gates would need to be relocated as part of the widening. SR 132 has two lanes to accept the proposed dual northbound left turn lanes. The right turn pocket lanes would likely require right-of-way from parcels on the northwest and northeast corners of the intersection, affecting their parking lots. The 2018 RTP/SCS project list does not contain a project that covers this location. Modifying the intersection should be listed as a future candidate project for the next RTP/SCS project list.

- **Garner Road/Claus Road and SR 132 Intersection:** The impact under design year (2045) conditions could be mitigated by providing a third southbound through lane and matching receiving lane and a southbound right turn pocket lane of 200 feet.

  This intersection modification can be completed on the north leg through restriping of the existing pavement. On the south leg, Garner Road, south of the railroad crossing, would need to be widened to accept the third lane. The previous 2014 RTP/SCS included a project to widen Garner Road from SR 132 to Finch Road to a four-lane expressway by 2024. Such a project would likely have provided acceptable operations at this location. Modifying the intersection should be listed as a future candidate project for the next RTP/SCS project list.

- **Faith Home Road and Whitmore Avenue Intersection:** The impact under construction year (2025) conditions could be mitigated by installing a traffic signal and providing left turn pocket lanes of 200 feet on the northbound, southbound and eastbound approaches. For design year (2045) conditions, the impact could be mitigated by providing through/right turn pocket lanes of 200 feet on the northbound and southbound approaches with matching receiving lanes.

  The proposed widening would affect residential and agricultural parcels at the intersection. The 2018 RTP/SCS project list contains a project to widen Whitmore Avenue to four lanes from Mitchell Road to Faith Home Road that is scheduled to be constructed in 2020. Based on this analysis, the planned project should include signalizing the intersection and adding left turn pocket lanes. The 2018 RTP/SCS project list contains a separate project to signalize the intersection by 2035. Based on this analysis, the planned project should include widening the north and south legs to provide the second through lane. The previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024.

- **Faith Home Road and Roeding Road Intersection:** The impact under construction year (2025) conditions could be mitigated by installing a traffic signal and adding left turn pocket lanes of 200 feet on all approaches. For design year (2045) conditions, the impact could be mitigated by providing through/right turn pocket lanes of 200 feet on the northbound and southbound approaches with matching receiving lanes.

  The proposed widening would likely affect agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list contains a project to signalize the intersection that is scheduled for 2035. Based on this analysis, the planned project should include the addition of left turn pocket lanes and widening the north and south legs to provide the second through lane. The previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024. Such a project would likely have provided acceptable operations at this location.

- **Faith Home Road and Service Road Intersection:** The impact under construction year (2025) conditions could be mitigated by installing a traffic signal and adding left turn pocket lanes of 200 feet on all approaches. For design year (2045) conditions, the mitigation measure should also include providing through/right turn pocket lanes of 200 feet on the northbound and southbound approaches with matching receiving lanes.

  The proposed widening would likely affect residential and agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list does not contain a project that covers this location. The previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024. Installing a traffic signal should be listed as a future candidate project for the next RTP/SCS project list.

- **Faith Home Road and Keyes Road Intersection:** The impact under construction year (2025) conditions could be mitigated by providing a second southbound left turn lane and matching receiving lane, a westbound right turn pocket lane of 300 feet, a second eastbound through/right turn pocket lane of 250 feet, and a northbound left turn pocket lane of 200 feet. For design year (2045) conditions, the mitigation measure would be the same as for construction year (2025) conditions.

  A project was recently completed to widen and signalize this intersection. The proposed widening would likely affect commercial and agricultural parcels adjacent to the intersection. The 2018 RTP/SCS project list does not contain a project that covers this location. However, the previous 2014 RTP/SCS included a project to widen Faith Home Road from Hatch Road to Keyes Road to a four-lane expressway by 2024. Modifying the intersection should be listed as a future candidate project for the next RTP/SCS project list.

- **SR 99 Southbound Ramps and Keyes Road Intersection:** The secondary impact under design year (2045) conditions (due to the mitigation measure suggested for the SR 99 Northbound Ramps/Keyes Road intersection) could be mitigated by providing a southbound right turn pocket lane of 250 feet.

The 2018 RTP/SCS project list contains a project that would signalize this intersection by 2018. This project should be modified to include a southbound right turn pocket of at least 250 feet. Based on this analysis, the planned project should include the addition of a southbound right turn pocket lane.

- **SR 99 Northbound Ramps and Keyes Road Intersection:** The impact under design year (2045) conditions could be mitigated by providing a northbound right-turn pocket lane of 500 feet and a westbound right- turn pocket lane of 250 feet.

  The 2018 RTP/SCS project list contains a project that would signalize this intersection by 2018 (not yet completed). This project should be modified to include a northbound right turn pocket of at least 500 feet and a westbound right turn pocket of at least 250 feet. Based on this analysis, the planned project should include the addition of northbound and westbound right turn pocket lanes.

- **Northbound SR 99: Taylor Road to Keyes Road:** The impact under design year (2045) conditions could be mitigated by adding a second off-ramp lane to Keyes Road (even though the off-ramp volume would not meet the threshold for a two-lane off-ramp).

  The 2018 RTP/SCS project list contains a project that would add auxiliary lanes between Keyes Road and Taylor Road by 2025. Based on this analysis, the planned project should include a two- lane northbound off-ramp to Keyes Road.

- **Southbound SR 99: Keyes Road to Taylor Road:** Operations could be improved by installing a ramp meter on the southbound on-ramp at Keyes Road.

  The 2018 RTP/SCS project list contains a project that would add auxiliary lanes between Keyes Road and Taylor Road by 2025. The planned project is recommended to include a ramp meter for the southbound on-ramp from Keyes Road.

Transportation/ Traffic: Measure TRAFFIC-2 (Traffic Management Plan (TMP))

- Prepare a TMP for project construction. A TMP is a program of activities for alleviating or minimizing work-related traffic delays by applying traditional traffic handling practices and innovative strategies including public awareness campaigns, motorist information, demand management, incident management, system management, construction methods and staging, and alternate route planning. Implementation of the measures in the TMP would reduce the temporary access and circulation impacts of the project. TMP strategies also strive to reduce overall duration of work activities where appropriate. Typical components of a TMP can include measures such as the implementation of staging, traffic handling, and detour plans; restricting construction work to certain days and/or hours to minimize impacts to traffic and pedestrians; coordination with other construction projects to avoid conflicts; and the use of portable changeable message signs to inform the public of construction activities. In addition, the TMP would include the following measures:

    - Any emergency service agency whose ability to respond to incidents will be affected by any lane closure must be notified prior to that closure.

- Work will be coordinated with the local busing system (including school buses and public systems) to minimize impacts on their bus schedules.

- The lead agency will provide information to residents and businesses before and during project work that may represent a negative impact on commerce and travel surrounding the zone of construction.

- During the design stage coordinate with M&ET Railroad to develop an agreement outlining the schedule for and steps needed to tie existing rails to the proposed realignment over the new Grade Separation Undercrossing.

- The construction contract will require the contractor to maintain driveway access at all times during construction.

Visual Resources: Measure AES-1 (Design Treatments)

- Where applicable, revegetation with native plants will be utilized to help restore the site to a more natural condition.

- The bridge design will use haunched (arch like shape along the bottom of the bridge) girders to minimize its depth.

- The bridge foundations will be located at either bank of the Tuolumne River to avoid permanent columns within the ordinary low water mark of main river channel. Two piers will be located between the ordinary low and ordinary high waters marks along the south bank.

- For the anticipated future widening, an aesthetic type of barrier will be used that could include openings to further reduce the impact that the full depth (top of barrier to bottom of bridge girder) may have.

Hydrology/ Floodplain: Measure HYDRO-1 (Floodplain Coordination):

- The County will coordinate with local, state, and federal water resource and floodplain management agencies as necessary during all aspects of the proposed Project. As applicable a FEMA floodplain map revision and Letter of Map Revision will be prepared.

Water Quality: Measure WQ-1 (Hydromodification)

- The Project creates and/or replaces more than one acre of impervious surface and would incorporate Site Design and Treatment Control Measures that prevent the post-project runoff from exceeding the pre-project runoff rate for a 2- year, 24-hour storm event. All hydromodification measures would be selected, sized, and situated in accordance with the guidance provided in the current MS4 permit and the County's Post-Construction Standards Plan. Potential Site Design Measures and Treatment Control Measures are listed in the table below.

  Potential Site Design and Treatment Control Measures

Site Design and Treatment Control Measure	California Stormwater Quality Association (CASQA) Specification
Stream setbacks and vegetative buffers (Site Design Measure)	TC-10
Soil quality improvement (Site Design Measure)	TC-40
Tree planting and preservation (Site Design Measure)	SD-10
Porous pavement (Site Design Measure)	SD-20
Vegetated swales (Site Design Measure)	TC-30
Rain harvesting and reuse (Site Design Measure)	TC-12
Bioretention and rain gardens (Treatment Control Measure)	TC-32
Infiltration trench, flow-through planter, or tree wells (Treatment Control Measure)	TC-10
Retention and detention basins (Treatment Control Measure)	TC-11; TC-12; TC-22; TC-40

Geology/Soils/Seismic/Topography: Measure GEO-1 (Liquefaction and Seismic Settlement)

- The potential for liquefaction and seismic settlement will be analyzed during design of the bridge and roadway based on the results of the design geotechnical investigation. Bridge foundations and roadways will be designed to address potential liquefaction potential and will meet applicable requirements for design of these features including those in the AASHTO LRFD Bridge Design Specifications and the Caltrans Highway Design Manual.

Paleontology: Measure PALEO-1 (Paleontological Mitigation Plan)

- The following measures will be implemented for soil units with a high paleontological sensitivity based upon depth of excavation below original grade. These measures will be referred to as the "Paleontological Monitoring Plan."

    - The Department's Special Provision 14-7.03 and 19-1.01A for paleontology mitigation implementation will be included in the construction contract special provisions section to advise the construction contractor of the requirement to conduct paleontological salvage. A qualified paleontologist will prepare Paleontological Monitoring Plan based on 65percent design.

    - The qualified paleontologist would designate a paleontological monitor to be present during qualifying earthmoving activities, as described in the Paleontological Monitoring Plan. The paleontologist and monitors will meet the criteria identified in the Department's SER, Chapter 8 regarding paleontology.

    - The Resident Engineer will notify the qualified paleontologist in advance of the start of construction activity and would attend any safety training programs for the

proposed Project. The proposed Project paleontologist would meet with the Resident Engineer and construction contractor at a preconstruction meeting to develop an agreed upon communication plan and provide for worker safety. All project personnel involved with excavation or drilling activities in paleontologically sensitive areas will receive a paleontological awareness training session prior to commencement of work.

- If paleontological resources are discovered during earthmoving activities, the construction crew would immediately cease work within a 60-foot radius of the find, and immediately notify the Resident Engineer. In the event that paleontological resources are discovered, fossil specimens would be properly collected and sufficiently documented to be of scientific value.

- For sediments containing microfossils (pollen, freshwater ostracods), the monitor would take bulk samples for off-site processing at a later time to recover any fossils. Oriented samples must be preserved for paleomagnetic analysis. Samples of fine matrices would be obtained and stored for pollen analysis.

- Macro fossils (large enough to view with the unaided eye) could include tusks and other vertebrate remains. Some of these resources may be fragile and require hardening before moving, and may require encasing within a plaster jacket for later preparation and conservation in a laboratory. Recovered specimens would be prepared for identification (not exhibition) and stabilized. Specimens would be identified by competent qualified specialists to a point of maximum specificity. Ideally, identification is of individual specimens to element, genus, and species.

- Where appropriate, specimens would be analyzed by stratigraphic occurrence, and by size, taxa, or taphonomic conditions. The results would be presented in a faunal list, a stratigraphic distribution of taxa, or evolutionary, ecological, or depositional deductions.

- Adequate storage in a recognized repository institution for the recovered specimens would be required. Specimens would be cataloged and a complete list would be prepared of specimens introduced into the collections or a repository by the curator of the museum or university.

- Upon the completion of excavation and/or drilling activities in paleontologically sensitive areas, the paleontologist will prepare a Paleontological Monitoring and Findings Report summarizing the results of the monitoring. The report will a summary of the field and laboratory methods, site geology and stratigraphy, faunal list, and a brief statement of the significance and relationship of the site to similar fossil localities. Full copies of the final Paleontological Monitoring and Findings Report will be deposited with the repository institution.

Hazardous Waste/ Materials: Measure HAZ-1 (Worker Safety, Waste Handling and Disposal)

- The construction contract will require all on-site personnel comply with standards found in the Construction Safety Orders and General Industry Safety Orders as defined by Cal/OSHA. Applicable worker safety standards include:

    - Exposure to arsenic in soil (above RWQCB ESL levels).

    - Exposure to ADL in soil (below RWQCB ESL levels)

    - Exposure to PAHs, CAM 17 metals, and SVOCs in the soil (specifically in the area of the existing M&ET railroad tracks.

- **Arsenic in Shallow Soil and Shallow Soil Close to M&ET Railroad Tracks:**

    - Dispose of excavated soils as Non-hazardous waste at Class II unit or Class III landfill depending on facility acceptance standard.

- **ADL in Shallow Soil:** The construction contract will require implementation of the following Department standard special provisions (SSP) and standard specifications:

    - *SSP 7-1.02K(6)(j)(iii) (10/19/2018) - Earth Material Containing Lead:* Requires a lead compliance plan for soil disturbance when lead concentrations are non-hazardous.

- **Yellow Traffic Striping:** Abate lead-based paint prior to roadway demolition with implementation of the following applicable Department SSP's.

    - *SSP 14-11.12 (10/19/2018) – Remove Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue:* Requires proper management of hazardous waste residue and a lead compliance plan.

    - Based on the traffic striping sample from the Faith Home Road - Ceres Bridge (over the Ceres Canal), lead containing paint (LCP) exceeded the total threshold limit concentration (TTLC) for lead (1,000 mg/kg), which pre-classifies the striping as hazardous toxic waste (per CCR Title 22, Chapter 11, Article 3). Therefore, yellow traffic striping along the southern portion of the proposed bridge should be disposed of at a permitted Class I disposal facility.

    - Paint used for traffic lane striping on the street intersections (E Hatch Road and Faith Home Road and Garner Road and Finch Road), should be tested for LCP prior to demolition/removal to determine proper handling and disposal methods during project construction. If lead is detected, then appropriate procedures will be included in the Construction Implementation Plan to avoid contact with these materials or generation of dust or vapors.

- **Concrete and Asphalt Waste:**

    - All asphalt concrete (AC) materials would be recycled per the Caltrans directive for reclaimed AC (AB 1306), in accordance with the January 27, 1993

Memorandum on “Department of Fish and Game Agreement on AC Grindings, Chunks and Pieces”

- Adhere to Caltrans Asphalt-Concrete and Portland Cement Concrete Grindings Reuse Guidance (2007).

- Reclaim and recycle concrete waste as appropriate.

- The construction contract will require implementation of the following Department SSP’s:

  - *SSP 60-2.01A (10/19/2018)*: Use for removing structures or portions of structures, including bridges, retaining walls, sound walls, and other concrete or masonry structures.

  - *SSP 60-2.02 (10/19/2018):* Use for bridge removal work.

  - *SSP 60-3.02(C 3) (10/19/2018):* Use for removing asphalt concrete surfacing from bridges.

- **Treated Wood Waste:** The construction contract will require the treated wood waste will be managed in accordance with the following Department SSP’s:

  - SSP 14-11.14 (10/19/2018) - Treated Wood Waste; and

  - California Department of Toxic Substance Control (DTSC) Treated Wood Waste Alternative Management Standard (22 CCR Chapter 34).

- **Electrical Transformers within Project Area**

  - Coordinate with PG&E to determine potential polychlorinated biphenyls in pole-mounted electrical transformers along the Project roadways.

  - If present abate transformers prior to construction of bridge approaches on roadways.

Air Quality: Measure AQ-1 (Construction Emissions)

- The construction contractor shall comply with the Department’s Standard Specifications Section 14-9.03 Dust Control of Caltrans’ Standard Specifications (2018).

- The construction contractor shall comply with Section 7-1.02 Emissions Reduction and Section 18 Dust Palliative of the Department’s Standard Specifications (2018).

- The various components of the Wind Erosion Control BMP (WE-1) from the Department’s Construction Site Best Management Practices Manual will be implemented as applicable.

- The Project would incorporate the use of energy-efficient lighting, such as LED traffic signals.

- The following SJVAPCD Regulation VIII construction measures will be implemented to meet SIP Control Measures as outlined in the SJVAPCD PM10 Maintenance Plan.

    - Apply water to unpaved surfaces and areas.

    - Use non-toxic chemical or organic dust suppressants on unpaved roads and traffic areas Limit or reduce vehicle speed on unpaved roads and traffic areas.

    - Maintain areas in a stabilized condition by restricting vehicle access.

    - Install wind barriers, as applicable.

    - During high winds, cease outdoor activities that disturb the soil.

    - Keep bulk materials sufficiently wet when handling.

    - Store and handle materials in a three-sided structure.

    - When storing bulk materials, apply water to the surface or cover the storage pile with a tarp.

    - Don't overload haul trucks. Overloaded trucks are likely to spill bulk materials.

    - Cover haul trucks with a tarp or other suitable cover. Or, wet the top of the load enough to limit visible dust emissions.

    - Clean the interior of cargo compartments on emptied haul trucks prior to leaving a site Prevent track out by installing a track out control device.

    - Clean up track out at least once a day. If along a busy road or highway, clean up track out immediately.

    - Monitor dust-generating activities and implement appropriate measures for **maximum dust control.**

Noise: Measure NOISE-1 (Construction Nosie)

- To minimize construction-generated noise the Project will implement the Department's Standard Specification 14-8.02, "Noise Control".

Biology/ Natural Communities: Measure BIO-1 (Riparian Forest)

- The County will obtain a Lake and Streambed Alteration Agreement (LSAA) from the California Department of Fish and Wildlife (CDFW), pursuant to Section 1600 of the California Fish and Game Code (CFGC), that contains requirements for riparian forest mitigation. The County will compensate for permanent loss of riparian forest by purchasing credits at a CDFW approved mitigation bank. The County will compensate

for the loss of riparian forest by purchasing credits at a minimum 1:1 ratio (1 credit-acre purchased for every 1 acre permanently affected; a total of 2.39 credit-acres). The County will adhere to all CDFW LSAA conditions.

- Tree removal will be minimized to the maximum extent possible.
- The limits of construction will be fenced by the County or Contractor to minimize impacts on retained trees.
- Trucks and other vehicles will not be allowed to park beyond, nor shall equipment be stored beyond, the fencing.
- No vegetation removal or ground disturbing activities will be permitted beyond the fencing.

Biology/ Natural Communities: Measure BIO-2 (Tuolumne River)

- Prior to work in the Tuolumne River, the appropriate Clean Water Act permits shall be acquired from the U.S. Army Corps of Engineers (Corps) and the Central Valley Regional Water Quality Control Board (RWQCB). The County will mitigate at a minimum 1:1 ratio for impacts to wetlands and waters of the State in accordance with the State of California's no-net-loss of wetlands policy and minimum mitigation ratio for impacts to wetlands and waters of the State. The County will comply with any compensatory mitigation requirement of a Clean Water Act Section 404 permit, Section 401 Water Quality Certification or CDFW LSAA as applicable.
- During construction, water quality will be protected by implementation of BMPs consistent with the Stanislaus County Storm Water Management Program (SWMP) and the current edition of the Departments' Stormwater Quality Handbooks to minimize the potential for siltation and downstream sedimentation of Tuolumne River.
- Riparian vegetation will be avoided and preserved to the maximum extent practicable. The limits of vegetation removal will be marked with temporary fencing or flagging.
- Channel access points will be flagged and used during site construction to minimize impacts to riverine and riparian habitats.
- Equipment will be refueled and serviced at designated construction staging areas. All construction material will be stored and contained in a designated area that is located away from channels to prevent transport of materials into the adjacent Tuolumne River. The preferred distance is a minimum 100 feet from riparian habitat or water bodies. A silt fence will be installed and adequate materials for spill cleanup will be kept on site. Construction vehicles and equipment will be maintained to prevent contamination of soil and water from external grease and oil and from leaking hydraulic fluid, fuel, oil, and grease.
- All disturbed soils in the Project area will undergo erosion control treatment prior to October 15 and/or immediately after construction is terminated at the completion of the Project. Treatment includes temporary seeding and the application of sterile straw mulch or equivalent. Any disturbed soils on a gradient of over 30 percent will have erosion control blankets installed.
- Areas temporarily disturbed on the banks of Tuolumne River will be revegetated and reseeded with native grasses and other native herbaceous annual and perennial species

prior to October 15 and/or immediately after construction is terminated at the completion of the Project in accordance with Appendix F (Revegetation Planting and Erosion Control Specifications) of the Project Natural Environment Study (NES). Reseeded areas will be covered with a biodegradable erosion control fabric to prevent erosion and downstream sedimentation. The project engineer will determine the specifications needed for erosion control fabric (e.g., sheer strength) based on anticipated maximum flow velocities and soil types. The seed type will consist of commercially available native grass and herbaceous species as described in Appendix F of the Project NES. No seed of nonnative species will be used unless certified to be sterile.

- In-water work (e.g. new pier construction) will be limited to the time of the year specified in wildlife agency permits (assumed to be July 1 through October 31). In-water work that is necessary outside of the permitted seasonal window will be isolated from the flowing channel with cofferdams, gravel berms, or similar approved structures. The contractor will prepare an isolation and dewatering plan for agency approval prior to working in wet areas outside of the seasonal window.
- Before the onset of construction activities, a qualified person will conduct an education program for all construction personnel. The training will include a description of all sensitive species with potential to occur in the Project area, their habitat requirements, the specific measures being taken to protect individuals of listed species in the project area, and the boundaries within which project activities will be restricted.
- Environmentally sensitive areas (ESAs) will be fenced to prevent encroachment of equipment and personnel into riparian areas, river channels and banks, and other sensitive habitats. ESAs will be clearly flagged for the duration of site construction. Access to and use of ESAs will be restricted. Vehicle fueling and staging areas will be located at least 100 feet from flagged ESAs.
- The contractor will prepare and implement a Stormwater Pollution Prevention Plan as required during permitting.
- Discharging pollutants from vehicle and equipment cleaning into any storm drains or watercourses is prohibited.
- Concrete waste materials, and other debris from demolition and construction activities will not be allowed to enter the flowing water of the Tuolumne River. Waste materials will be disposed of offsite, at an approved location, where they cannot enter surface waters.
- A Spill Prevention, Control, and Countermeasures (SPCC) Plan will be developed to provide consistent, appropriate responses to spills that may reasonably be expected with implementation of the project. The SPCC Plan will be kept on-site during construction and the appropriate materials and equipment will also be on-site during construction to ensure the SPCC Plan can be implemented. Personnel will be knowledgeable in the use and deployment of the materials and equipment so response to an accidental spill will be timely.
- Water will be applied in construction areas, including access roadways, to control dust. Soil stockpiles will be covered when weather conditions require.
- Coir rolls, straw wattles, or similar materials will be used at the bases of slopes during construction to capture sediment.

- Graded areas will be protected from excessive erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion-control netting (such as jute or coir) as appropriate on sloped areas.
- Borrow or fill material used in the Project area shall be native or, if from offsite, certified to be non-toxic and weed free.

Biology/ Natural Communities: Measure BIO-3 (Seasonal Wetland)

- ESA fencing will be placed between the limits of construction and the seasonal wetland to prevent encroachment by construction equipment and personnel. The ESA fencing will be in place prior to commencement of construction. Trucks and other vehicles will not be allowed to park beyond, nor shall equipment be stored beyond the fencing. No vegetation removal or ground disturbing activities will be permitted beyond the fencing.

Biology/ Plant Species: Measure BIO-4 (Special-Status Plants)

- A qualified biologist will conduct a preconstruction botanical survey in May for special-status plants.
- If special status plants are not detected during the survey, then no further avoidance and minimization measures will be required.
- If special-status plants are identified in the Project area, then 1) habitat occupied by special-status plants will be flagged as environmentally sensitive and avoided by construction, and 2) prior to construction all construction personnel will receive environmental training that covers identification of the special-status plant species, and the protective measures in place.
- If a State-listed rare plant species is found in the Project area and cannot be avoided, CDFW will be notified at least 10 days prior to construction in accordance with the California Native Plant Protection Act of 1977 (CFGC Sections 1900-1913) to allow sufficient time to transplant the individuals to a suitable location.

Biology/ Animal Species: Measure BIO-5 (Silvery legless lizard)

- Prior to construction activities, a qualified biologist shall conduct an Employee Education Program for the construction crew. The biologist shall meet with the construction crew at the site at the onset of construction to educate the construction crew on the following: 1) a review of the project boundaries including staging areas and access routes; 2) the special-status species that may be present, their habitat, and proper identification; 3) the specific avoidance and minimization measures that will be incorporated into the construction effort; 4) the general provisions and protections afforded by the USFWS and the CDFW; and 5) the proper procedures if a special-status animal is encountered within the project site.
- The biological monitor shall be on-site during initial vegetation removal activities to protect any special-status species encountered. Protection methods could include, but are not limited to, stopping work in the area where the animal is encountered until it has moved on its own outside of the site or moving individuals outside of the site to adjacent appropriate habitat.

Biology/ Animal Species: Measure BIO-6 (Western Pond Turtle)

- A biologist shall conduct a preconstruction survey for WPT within 48 hours prior to the onset of vegetation removal or ground disturbance in the Project area. If any WPT are found, construction activities will stop to allow the biologist sufficient time to relocate the WPT. WPT will be relocated to the closest suitable habitat where they will not be affected by construction. Detailed records of individuals that are relocated should be maintained by the CDFW-approved biologist, to determine whether translocated individuals are returning to the project area. These records should include size, coloration, any distinguishing features, and photographs.

- During construction, if a WPT is observed in the active construction zone, construction will cease and a qualified biologist will be notified. Construction will resume when the biologist has either relocated the WPT out of the construction zone to nearby suitable habitat, or, after thorough inspection, determined that the WPT has moved away from the construction zone.

Biology/ Animal Species: Measure BIO-7 (Migratory Birds and Birds of Prey)

- If construction begins outside the 15 February to 31 August breeding season, there will be no need to conduct a preconstruction survey for active nests.

- Vegetation scheduled for removal should be removed during the non-breeding season from 1 September to 14 February. Vegetation may be removed using hand tools, including chain saws and mowers, and may be trimmed several inches above the ground with the roots left intact to prevent erosion.

- If construction or vegetation removal begins between 15 February and 31 August, a biologist shall conduct a survey for active bird of prey nests within 250 feet and active MTBA bird nests within 100 feet of the BSA from accessible areas within one week prior to construction. The measures listed below shall be implemented based on the survey results.

No Active Nests Found:

- If no active nest of a bird of prey, MBTA bird, or other CDFW protected bird is found, then no further avoidance and minimization measures are necessary.

Active Nests Found:

- If an active nest of a bird of prey, MBTA bird, or other CDFW protected bird is discovered that may be adversely affected by construction activities or an injured or killed bird is found, immediately:

    - Stop all work within a 100-foot radius of the active nest
    - Notify the Engineer
    - Do not resume work within the specified radius of the discovery until authorized.

- In accordance with the table below the biologist shall establish a minimum 250-foot Environmentally Sensitive Area (ESA) around the nest if the nest is of a bird of prey, and

a minimum 100-foot ESA around the nest if the nest is of an MBTA bird other than a bird of prey.

Species Protection Areas

Identification	Location
Bird of Prey	250 feet no-disturbance buffer
MBTA protected bird (not bird of prey)	100 feet no-disturbance buffer

- Activity in the ESA will be restricted as follows:
    - Do not enter the ESA unless authorized.
    - If the ESA is breached, immediately:
        - Secure the area and stop all operations within 60 feet of the ESA boundary
        - Notify the Engineer
    - If the ESA is damaged, the County determines what efforts are necessary to remedy the damage and who performs the remedy.
- No construction activity shall be allowed in the ESA until the biologist determines that the nest is no longer active, or unless monitoring determines that a smaller ESA will protect the active nest.
- The ESA may be reduced if the biologist monitors the construction activities and determines, in consultation with CDFW, that no disturbance to the active nest is occurring. Reduction of the ESA depends on the species of bird, the location of the nest relative to the Project, Project activities during the time the nest is active, and other Project-specific conditions.
- Between 15 February and 31 August, if additional trees or shrubs need to be trimmed and/or removed after construction has started, a survey will be conducted for active nests in the area to be affected. If an active nest is found, the above measures will be implemented.
- If an active nest is identified in or adjacent to the construction zone after construction has started, the above measures will be implemented to ensure construction is not causing disturbance to the nest.

Biology/ Animal Species: Measure BIO-8 (Burrowing Owl)

- During the burrowing owl non-breeding season (1 September to 31 January) of the winter prior to construction, it is recommended that a biologist survey the Project area for wintering burrowing owls or potential denning habitat. If wintering burrowing owls are found in the Project area, they should be passively excluded in accordance with the CDFW 2012 guidelines, prior to the start of the nesting season.

Biology/ Animal Species: Measure BIO-9 (Bats)

- A preconstruction survey will be performed by a qualified biologist to determine if bat species are roosting in hollow trees in the Project area. The survey will be performed prior to April 1, before the bats have given birth. If bats are roosting in the Project area, exclusion of these bats shall take place prior to construction.

- To identify the presence of potential resident Townsend's big-eared bats, potential roost trees within the project area shall be surveyed by a qualified biologist within 15 days prior to removal to determine if bats are present or if any trees can be excluded as suitable bat roosts due to the lack of suitable structural characteristics. The survey method shall include visual verification to identify guano and other evidence of bat presence. If it is determined that bats are not using the trees, or the trees can be excluded as bat roosts, removal of these trees would not be subject to the seasonal restrictions.

- All potential roost trees (i.e., 20-inch diameter breast height (DBH) or greater), including snags, shall be removed from the project site between September 1 and October 31, which is outside of the bat breeding and hibernation season and when Townsend's big-eared bat densities in the Central Valley are lowest. Removal of trees during this period will reduce impacts to any bats or their young occurring on the project site during the breeding season or during winter hibernation.

- If a potential roost is identified, methods to evict the bats shall consist of the following:

    - Ultrasound deterrents or other sensory irritants may be set up to encourage bats to depart from the site on their own. Deterrents shall be set up late in the day or in the evening during weather and temperature conditions conducive to bat activity to reduce the likelihood of evicted bats falling prey to diurnal predators.

    - Prior to tree removal, confirmed roost trees would be shaken, repeatedly struck with a heavy implement such as an ax and several minutes should pass before felling trees to allow bats time to arouse and leave the tree.

Biology/ Threatened and Endangered Species: Measure BIO-10 (Vernal pool Fairy shrimp)

- For every acre of habitat directly affected, at least two vernal pool credits will be dedicated within a USFWS-approved ecosystem preservation bank, and at least one vernal pool creation credit will be dedicated within a USFWS-approved habitat mitigation bank. Permanent impacts to VPFS habitat shall be mitigated by purchase of 0.34 vernal pool preservation credits and 0.17 vernal pool creation credits, from a USFWS-approved bank.

Biology/ Threatened and Endangered Species: Measure BIO-11 (Valley elderberry longhorn beetle, VELB)

- To compensate for impacts to VELB, the 2017 USFWS Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (VELB Framework) recommends a

compensation ratio of 3:1 when proposing habitat-level compensation for riparian habitats, and a compensation ratio of 1:1 for non-riparian habitat. The purchase of 64 VELB credits from a USFWS-approved bank is proposed as compensation for impacts to 0.83 acre of riparian habitat and 0.10 acre of non-riparian habitat (see table below).

Summary Table of VELB Mitigation Compensation

Habitat Type	Compensation Ratio [1]	Total Acres of Disturbance	Compensation Acreage	VELB Credit Compensation [2]
Riparian	3:1	0.83	2.49	61 credits
Non-Riparian	1:1	0.10	0.10	3

[1] acre(s) of credits: acre(s) of disturbance. Compensation ratio obtained from Table 1 of the 2017 VELB Framework.

[2] Per the 2017 VELB Framework, a single credit equals 1,800 square feet or 0.041 acres. The VELB Credit Compensation was calculated by dividing the Compensation Acreage by the number of acres in a VELB Credit (0.041), and rounding up.

[3] Non-riparian habitat is the acres of elderberry shrub canopy outside of the riparian habitat.

- Prior to Project construction a qualified biologist will conduct a filed survey to confirm the acreage of VELB habitat affected by the Project. If the acreage of VELB habitat affected by the Project has changed USFWS will be notified to determine if reinitiation of Section 7 Endangered Species Act is required.

- All areas to be avoided during construction activities will be fenced with temporary orange construction fence and/or flagged as close to construction limits as feasible.

- Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) may need an avoidance area of at least 20 feet from the drip-line, depending on the type of activity.

- A qualified biologist will provide training for all contractors, work crews, and any onsite personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging elderberry shrubs, and possible penalties for noncompliance.

- A qualified biologist will monitor the work area at project appropriate intervals to assure that all avoidance and minimization measures are implemented.

- As much as feasible, all activities that could occur within 165 feet of an elderberry shrub, will be conducted outside of the flight season of the VELB (March - July).

- Trimming may remove or destroy VELB eggs and/or larvae and may reduce the health and vigor of the elderberry shrub. In order to avoid and minimize adverse effects to VELB when trimming, trimming will occur between November and February and will avoid the removal of any branches or stems that are ≥ 1 inch in diameter. Measures to address regular and/or large scale maintenance (trimming) should be established in consultation with the USFWS.

- Herbicides will not be used within the drip-line of the shrub. Insecticides will not be used within 98 feet of an elderberry shrub.

- Mechanical weed removal within the drip-line of the shrub will be limited to the season when adult VELB are not active (August - February) and will avoid damaging the elderberry.

- Erosion control will be implemented and the affected area will be re-vegetated with appropriate native plants, according to Appendix F of the Project Natural Environment Study (NES).

Biology/ Threatened and Endangered Species: Measure BIO-12 (Steelhead – California Central Valley)

- Impacts to CCV steelhead shall be mitigated by purchase of restored or preserved Shaded Riverine Aquatic habitat mitigation credits from a NMFS-approved mitigation bank. The type of mitigation credits to be purchased will reflect the type of habitat being impacted. Shaded riverine aquatic (SRA) habitat, with shallow water habitat, will be mitigated at a 3:1 ratio for permanent impacts (0.02 acre x 3 = 0.06 credits) and a 1:1 ratio for temporary impacts (0.20 credits). The remaining temporary impacts (0.08 acre) are to open channel, and will be mitigated at a 1:1 ratio (0.08 credits). A total of 0.34 restored or preserved Shaded Riverine Aquatic habitat credit will be purchased from a NMFS-approved bank (such as the Cosumnes Floodplain Mitigation Bank). The credit purchased must be approved by NMFS to fully mitigate impacts to California Central Valley (CCV) Steelhead DPS, CCV Steelhead Critical Habitat, and EFH for the CCV Steelhead DPS.

- Measures shall be taken by the County to minimize the potential underwater sound impacts related to pile driving on to listed species.

    - A wood block, bubble curtain, or similar protection will be installed (prior to the driving of piles) to further reduce the effects of noise and vibration to fish associated with pile-driving activities if it is determined that such activities must occur in the water.

    - If sound levels exceed those indicated in the surrogate (as described in section 2.9.1 of the 8 January 2021 approved NMFS Biological Opinion), pile driving shall cease and Caltrans shall call NMFS to discuss additional measures for reducing the levels.

    - Pile-driving activity shall occur during daylight hours only, to ensure listed fish species are allowed upstream and downstream passage at night when they typically migrate (the periods from 10 pm to 8 am are typical periods for the migration of most of the listed species in their juvenile and adult life stages).

    - No simultaneous pile driving shall occur. If piles are driven with multiple impact hammers in the same day, pile strikes occurring at the same time shall be avoided in order to avoid potential overlapping sound in the river amplifying

sound impacts to fish greater than sound levels described in section 1.3.4 of the 8 January 2021 approved NMFS Biological Opinion.

- In-water pile-driving activities shall be restricted to July 1 to October 31. No in-water pile-driving activity is to extend past this date, as it may pose a significant disturbance to anadromous fish migration through the Tuolumne River.

- As applicable, electrofishing operations conducted during the fish rescue operations, shall be conducted according to the NMFS (2000) Guidelines for Electrofishing, and all electrofishing operators shall have proper training.

    - All electrofishing activity shall be conducted in accordance to the NMFS (2000) Guidelines for Electrofishing.

    - Electrofishing operator must have appropriate training and experience with electrofishing techniques. Operators should be familiar with electric circuit and field theory, safety, and fish injury awareness and minimization. Operator should have at least 50 hours of electrofishing experience in the field using similar equipment.

    - Electrofishing equipment must be in good working condition and operators should go through the manufacturer's preseason checks, adhere to all provisions, and record maintenance work in a logbook. Each electrofishing session must start with all settings (voltage, pulse width, and pulse rate) set to the minimums needed to capture fish. These settings should be gradually increased only to the point where fish are immobilized and captured.

    - If any listed salmonids are captured during electrofishing, the biologist shall immediately return the fish to the water in a manner that will not induce further harm (i.e., not to be susceptible to the electric current for a second time). This can be accomplished by temporarily stopping electrofishing, or returning the fish to the water downstream of the activity, providing enough distance from the anodes that the fish would not be shocked again.

- Measures shall be taken by the County to reduce mortality of listed species requiring capture/relocation in association with dewatering activities.

    - During dewatering activities, a qualified fish biologist shall be present on site to make observations, and capture/relocate fish if they become entrapped in the dewatered area.

    - Only fish biologists trained in salmonid capture and relocation shall remove and relocate fish during dewatering activities.

    - Any captured listed fish species shall be immediately relocated back into the Tuolumne River downstream of the construction activity.

- At least 90 days prior to groundbreaking activities, the County will provide to NMFS for review and approval a report describing how impacts of the incidental take on listed species in the action area will be monitored and documented. These will include how acoustic noise generated during the impact hammer activity will be measured to ensure the surrogate for noise impacts will not be exceeded.

- County shall notify NMFS of any unauthorized activities (regardless of who conducted said activities) or emergencies resulting in any adverse impacts not described in the 8 January 2021 approved NMFS Biological Opinion. This notification shall be made within 48 hours or sooner, if possible.

- Within 90 days of project completion, County is required to submit a report. The report shall include a summary description of projected and actual start dates, progress, and completion of the Project and verify that take was not exceeded, confirmation that the mitigation bank credits have been purchased, all avoidance and minimization measures were followed, area of any on-site revegetation, and observation of listed fish species. Updates and reports required by these terms and conditions shall be submitted by December 31 of the construction year:

    - Electronically to the NMFS CCVO at the following e-mail address: ccvo.consultations@noaa.gov

    - And mailed to:

      Cathy Marcinkevage
      Assistant Regional Administrator
      Central Valley Office
      National Marine Fisheries Service
      650 Capitol Mall, Suite 5-100
      Sacramento CA 95814

- Any observations of listed fish species mortalities or abnormal behavior shall immediately be reported to NMFS per the instructions in Term and Condition 5.a. within 24 hours. This information shall include species observed, life history stage, location (including GPS coordinates if available), number of fish observed, time of day, as well as any other relevant details that are available. If possible, mortalities shall be collected, frozen, and individually labeled with appropriate information. Any dead specimen(s) should be placed in a cooler with ice and either held for pick up by NMFS personnel or an individual designated by NMFS to do so, or sent to:

      NMFS Southwest Fisheries Science Center
      Fisheries Ecology Division
      110 Shaffer Road
      Santa Cruz, California 95060

- Equipment will be inspected on a daily basis for leaks and completely cleaned of any external petroleum products, hydraulic fluid, coolants, and other deleterious materials prior to operating the equipment.

- Maintenance and construction activities (other than pile driving which is addressed above) will be avoided at night to the extent practicable. When night work cannot be avoided, disturbance of sensitive species and managed habitats (including EFH) will be avoided and minimized by restricting substantial use of temporary lighting to the least sensitive seasonal and meteorological windows. Lights on work areas will be shielded and focused to minimize fugitive lighting.

- An underslung work platform, temporary work trestle or similar structure will be installed to keep bridge debris and construction, maintenance, and repair materials from falling into the river during construction.

- Temporary sediment basins, if installed, will be cleaned of sediment and the site restored to pre-construction contours (elevations, profile, and gradient) and function post-construction.

- Excavated material will not be stored or stockpiled in the channel. Any excavated material that will not be placed back in the channel or on the bank after construction will be end-hauled to an approved disposal site.

- Gravel and large woody debris (LWD) excavated from the channel that is temporarily stockpiled for reuse in the channel will be stored in a manner that prevents mixing with river flows.

- Cofferdams or other diversions will affect no more of the river channel than is necessary to support completion of the construction activity. Immediately upon completion of in-channel work, temporary fills, cofferdams, diversions, and other in-channel structures that will not remain in the river (i.e., materials other than clean, spawning-sized gravel) will be removed in a manner that minimizes disturbance to the aquatic environment.

- If pumps are used to temporarily divert or dewater the Tuolumne River to facilitate construction, an acceptable fish screen must be used to prevent entrainment or impingement of small fish. Potential contact between fish and pump will be minimized and/or avoided by constructing an open basin prior to commencing dewatering. The open basin will be inspected for fish, which will be salvaged and placed in the active flow of Tuolumne River adjacent to the work zone by a qualified biologist.

- The temporary diversion structure will be designed so that fish passage is maintained up and down stream of the Project area. The diversion will not create an impassible barrier. The diversion would allow flows to pass through the channel under the bridge while maintaining water quality in the river. An open channel diversion will be used during construction to minimize impacts to CCV steelhead. The contractor will prepare a creek diversion and dewatering plan that complies with any applicable permit conditions.

- All structures and imported materials placed in the river channel or on the banks during construction that are not designed to withstand high flows will be removed before such flows occur.

- Temporary fills, cofferdams, and diversions that are left in the river channel will be composed of washed, rounded, spawning-sized gravel between 0.4 to 4 inches in diameter; gravel in contact with flowing water will be left in place, modified (i.e., manually spread out using had tools if necessary) to ensure adequate passage for all life stages of fish present in the Project area, and then allowed to disperse naturally by high winter flows; materials placed above the OHWM must be clean washed rock or contained to prevent material conveyance to the river or mixing with clean gravel.

- The contractor will monitor turbidity levels in the river during construction and implement a plan that avoids unacceptable sedimentation and turbidity.

- Water pumped from areas isolated from surface water to allow construction to occur in the dry will be discharged to an upland area providing overland flow and infiltration before returning to the river. Upland areas may include sediment basins of sufficient size to allow infiltration rather than overflow or adjacent dry gravel/sand bars if the water is clean and no visible plume of sediment is created downstream of the discharge. Other measures may be used to settle and filter water such as Baker tanks.

- Drilling will be conducted in dry river channel areas, to the extent practicable. If drilling must occur where water is present, the work area will be isolated from live water prior to work. When geotechnical drilling takes place within the river channel, including gravel beds and bars, drilling mud will be bentonite without additives; initial drilling through gravel will be accomplished using clean water as a lubricant; after contact with bedrock or consolidated material, drilling mud (i.e., bentonite clay) may be used. All drilling fluids and materials will be self-contained and removed from the site after use; drilling will be conducted inside a casing so that all spoils are recoverable in a collection structure.

- Stream width, depth, velocity, and slope that provide upstream and downstream passage of adult and juvenile fish will be preserved according to current NMFS and CDFW guidelines and criteria or as developed in cooperation with NMFS and CDFW to accommodate site-specific conditions.

- Flow through new and replacement structures must meet the velocity depth, and other passage criteria for salmonid streams as described by the current NMFS and CDFW guidelines or as developed in cooperation with NMFS and CDFW to accommodate site-specific conditions.

- Rock slope protection (RSP), sheet piles, and other erosion control materials will be pre-washed to remove sediment and/or contaminants. Temporary material storage piles (e.g., RSP) will not be placed in the 100-year floodplain during the rainy season (October 15 through May 31), unless material can be relocated within 12 hours before the onset of a storm.

- Trees as identified in any special contract provisions or as directed by the Project Engineer will be preserved. Hazard trees greater than 24 inches in diameter at breast height (DBH) will be removed only under the supervision of the Project Biologist. Trees will be felled in such a manner as not to injure standing trees and other plants to the extent practicable.

- Where vegetation removal is temporary to support construction activities, native species will be re-established that are adapted to the project location and that contribute to a diverse community of woody and herbaceous plants. Disturbance and removal of aquatic vegetation will be minimized. The limits of disturbance will be identified; native vegetation, river channel substrate, and LWD disturbed outside these limits should be replaced if damaged. The minimum amount of wood, sediment and gravel, and other natural debris will be removed using hand tools, where feasible, only as necessary to maintain and protect culvert and bridge function, ensure suitable fish passage conditions, and minimize disturbance of the riverbed.

- Soil compaction will be minimized by using equipment that can reach over sensitive areas and that minimizes the pressure exerted on the ground. Where soil compaction is unintended, compacted soils will be loosened after heavy construction activities are complete.

- LWD subject to damage or removal will be retained and replaced on site after project completion as long as such action would not jeopardize infrastructure or private property or create a liability. LWD not replaced on-site will be stored or offered to other entities for use in other mitigation/restoration projects where feasible.

- Vegetation disturbance will be minimized by locating temporary work areas to avoid patches of native aquatic vegetation, substantial LWD, and spawning gravel. Where vegetation removal is temporary to support construction activities, native species will be re-established that are specific to the project location and that comprise a diverse community of aquatic plants.

- Where river bed material is removed temporarily to facilitate construction, it will be stored adjacent to the site, then placed back in the channel post-construction at approximately pre-project depth and gradient.

- Existing roadways will be used for temporary access roads whenever reasonable and safe. The number of access and egress points and total area affected by vehicle operation will be minimized; disturbed areas will be located to reduce damage to existing native aquatic vegetation, substantial large woody debris, and spawning gravel.

- Modified or disturbed portions of rivers, banks, and riparian areas will be restored as nearly as possible to natural and stable contours (elevations, profile, and gradient). At project completion, the riverbank toe will not extend farther into the active channel than the existing riverbank toe location.

- The use of RSP at bridge abutments will be limited to the minimum necessary to protect the abutments under flood conditions.

- Bank stabilization will incorporate bioengineering solutions consistent with site-specific engineering requirements, when feasible. Where RSP is necessary, native riparian vegetation and/or LWD may be incorporated into the RSP.

- Stanislaus County shall retain a qualified, NMFS-approved biologist with expertise in the areas of anadromous salmonid biology, including handling, collecting, and relocating salmonids, salmonid/habitat relationships, and biological monitoring of salmonids. Stanislaus County shall ensure that all biologists working on the project will be qualified to conduct fish collections in a manner which minimizes potential risks to salmonids.

- If individuals of sensitive aquatic species may be present and subject to potential injury or mortality from construction activities, a qualified biologist will conduct a preconstruction visual survey (i.e., bank observations).

- The NMFS-approved biologist will be present during in-water activities, including installation and removal of the diversion structure and dewatering activities. If steelhead are observed, construction will be halted until they move out of the construction zone. If they remain in the construction zone for an extended period, NMFS will be contacted for further guidance.

- The NMFS-approved biologist will continuously monitor for the purpose of removing and relocating any listed species that were not detected or could not be removed and relocated prior to construction. The project biologist will be present at the work site until all sensitive species to be removed from a project site have been removed and relocated.

- When sensitive aquatic species are present in the Project area and it is determined that they could be injured or killed by construction activities, a NMFS-approved biologist will identify appropriate methods for capture, handling, exclusion, and relocation of individuals or resources that could be affected. Where such resources cannot be feasibly captured, handled, excluded, or relocated (e.g., salmonid redd), actions that could injure or kill individual organisms or harm resources will be avoided or delayed until the species leaves the affected area or the organism reaches a stage that can be captured, handled, excluded, or relocated.

- The NMFS-approved biologist will conduct, monitor, and supervise all capture, handling, exclusion, and relocation activities; ensure that sufficient personnel are available for safe and efficient collection of listed species; and ensure that proper training of personnel has been conducted in identification and safe capture and handling of sensitive aquatic species.

- Individual organisms will be relocated the shortest distance possible to habitat unaffected by construction activities. Within occupied habitat, capture, handling, exclusion, and relocation activities will be completed no earlier than 48 hours before construction begins to minimize the probability that listed species will recolonize the affected areas.

- Within temporarily drained river channel areas, salvage activities will be initiated before or at the same time as river area draining and completed within a time frame necessary to avoid injury and mortality of sensitive aquatic species.

- The NMFS-approved biologist will maintain detailed records of the species, numbers, life stages, and size classes of listed species observed, collected, relocated, injured, and killed, as well as recording the date and time of each activity or observation.

- Before construction activities begin, the project environmental coordinator or NMFS-approved biologist will discuss the implementation of the required BMPs with the maintenance crew or construction resident engineer and contractor, and identify and document environmentally sensitive areas and potential occurrence of listed species.

- Stanislaus County will designate a biological monitor to monitor on-site compliance with all project BMPs and any unanticipated effects on listed species. Non-compliance with BMPs and unanticipated effects on listed species will be reported to the resident engineer or maintenance supervisor immediately. When non-compliance is reported, the resident engineer or maintenance supervisor will implement corrective actions immediately to meet all BMPs; where unanticipated effects on listed species cannot be immediately resolved, the resident engineer or maintenance supervisor will stop work that is causing the unanticipated effect until the unanticipated effects are resolved. The biological monitor should be approved by NMFS.

- A NMFS-approved biologist will train project staff on-site regarding habitat sensitivity, identification of CCV steelhead, and required practices before the start of construction. The training shall include the general measures that are being implemented to conserve CCV steelhead as they relate to the project, penalties for noncompliance, and boundaries of the construction area. A fact sheet or other supporting materials containing this information will be prepared and distributed. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures.

- A NMFS-approved biological monitor will be designated for the project and will visit the site a minimum of once per week to ensure that ESA fencing is intact and that activities are being conducted in accordance with the agency conditions of approval.

- A notice that fish rescue and relocation will be conducted shall be submitted to CDFW and NMFS at least 10 days prior to dewatering along with the names of the biologist(s) that will be conducting the fish rescue and relocation. All fish exclusion and relocation activities will adhere to accepted NMFS protocols.

Biology/ Invasive Species: Measure BIO-13 (Invasive Plants)

- To reduce the spread of invasive plant species, all mud and debris will be washed off construction equipment prior to entering the site.

- All disturbed areas will be will be restored to pre-construction contours and re-vegetated with appropriate native plants, according to Appendix F of the Project Natural Environment Study (NES).

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Appendix D: Copy of the Land Conservation Act contract for APN 018-062-002

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APPLICATION NO. 77-2803

RECORDED AT REQUEST OF:
Stanislaus County
Board of Supervisors

WHEN RECORDED RETURN TO:
Stanislaus County
Planning Department

THIS SPACE FOR RECORDER ONLY

This agreement recorded on
Feb. 3 1978, in
Vol. 2875, Page 579
Instrument No. 41536
Stanislaus County Records.

CALIFORNIA LAND CONSERVATION CONTRACT NO. 77-2803

THIS CALIFORNIA LAND CONSERVATION CONTRACT is made and entered into this 25 day of _____, 1977, by and between the County of Stanislaus, a political subdivision of the State of California, hereinafter referred to as "County" and the undersigned landowners or the successors thereof, hereinafter referred to as "Owner" as follows:

WHEREAS, Owner is the legal owner of certain real property, herein referred to as the subject property, situate in the County of Stanislaus, State of California; and

WHEREAS, the subject property is presently devoted to agricultural and compatible uses; and

WHEREAS, subject property is located in an agricultural preserve heretofore established by County by Resolution dated October 20, 1970; and

WHEREAS, both Owner and County desire to limit the use of subject property to agricultural and compatible uses in order to discourage premature and unnecessary conversion of such land from agricultural uses, recognizing that such land has definite public value as open space, that the preservation of such land in agricultural production constitutes an important physical, social, esthetic, and economic asset to the County to maintain the agricultural economy of County and the State of California, and that the common interest is served by encouraging and making feasible the orderly expansion of development of the urban and commercial sectors of the County to avoid the disproportionate expense involved in providing municipal services to scattered development; and

WHEREAS, both Owner and County intend that the Contract is and shall continue to be through its initial term and any extension thereof an enforceable restriction within the meaning and for the purposes of Article XXVIII of the California Constitution and thereby qualify as an enforceable restriction as defined in Revenue and Taxation Code Section 422;

NOW, THEREFORE, the parties, in consideration of the mutual covenants and conditions set forth herein and the substantial public benefits to be derived therefrom, do hereby agree as follows:

(1) The Contract is made and entered into pursuant to the California Land Conservation Act of 1965 (Chapter 7 of Part 1 of Division 1 of Title 5 of the California Government Code, commencing with Section 51200), hereinafter referred to as the Act, as such Act has been amended or may hereafter be

(15) Owner and holders of security interests designate the following person as the Agent for Notice to receive any and all notices and communications from County during the life of the Contract. Owner will notify County in writing of any change of designated person or change of address for him:

DESIGNATED AGENT: HAROLD O. MILLER

MAILING ADDRESS: 4243 E HATCH RD
MODESTO CALIF. 95351

(16) I desire to place the following parcels of real property under Contract:

PARCEL NO.	CODE AREA	ACREAGE	SITUS ADDRESS
19-22	067-02	19.83	11124 E. Whitmore ave.
18-62	54-02	78.66	4243 E. HATCH RD.

(List the Assessment Number and Acreage for each parcel of property to be included under the Contract. Also, attach to this application a copy of the Assessor's Map for each parcel.)

IN WITNESS WHEREOF, the parties hereto have executed the within Contract the day and year first above written.

OWNERS:

NAME (print or type)	SIGNATURE (all to be notarized)	DATE	SIGNED AT (city)
HAROLD O. MILLER	Harold O. Miller	Dec 27, 1976	HUGHSON
MARJORIE E. MILLER	Marjorie E. Miller	Dec 27, 1976	HUGHSON

SECURITY HOLDERS:

NAME (print or type)	SIGNATURE (all to be notarized)	DATE	SIGNED AT (city)
HENRY M. LEVENTINI	Henry M. Leventini	12/28/76	MODESTO
ALEX C. LEVENTINI	Alex C. Leventini	12/28/76	MODESTO

COUNTY:

JAN 25 1977
Dated

12-28-76
Chairman, Board of Supervisors

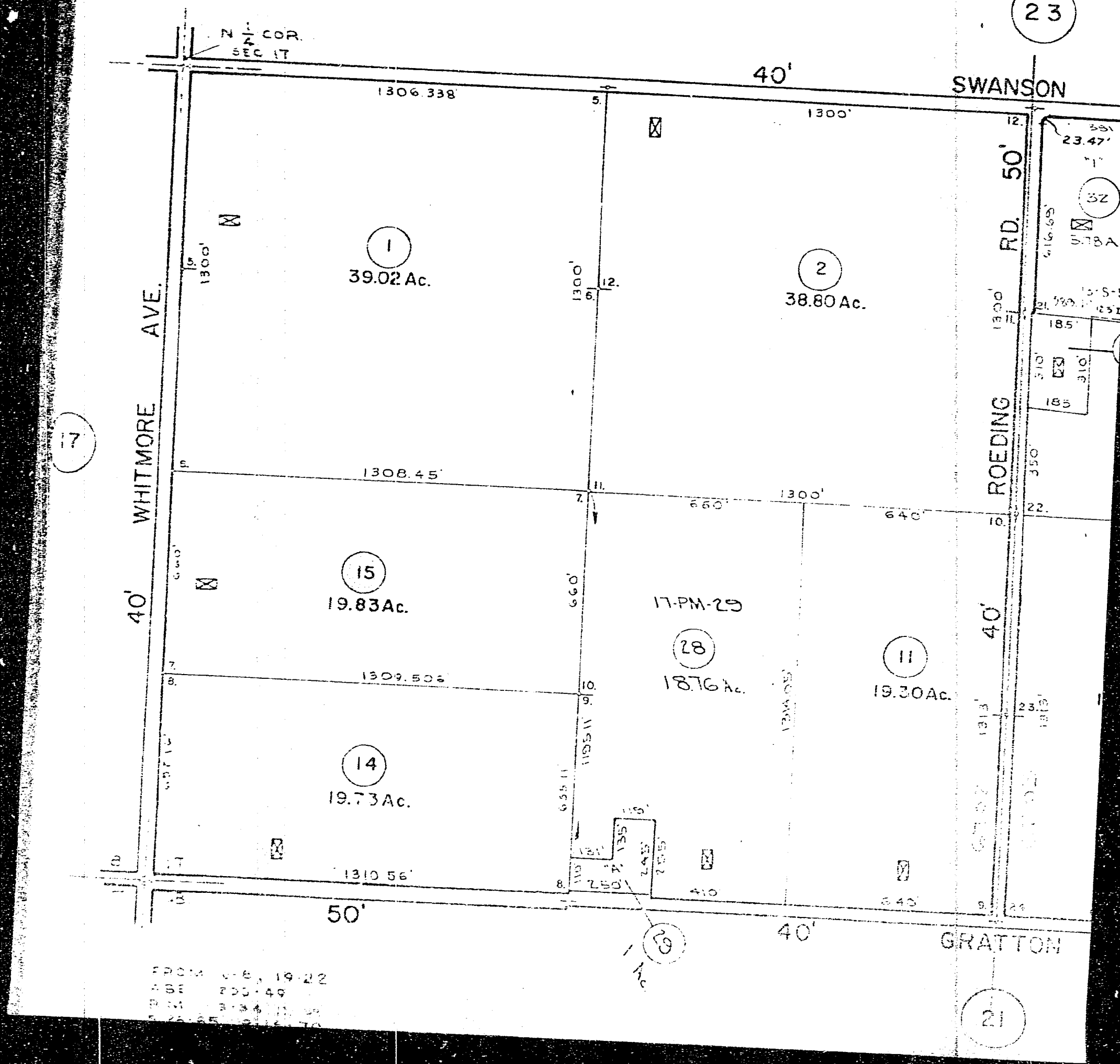
(Staple notary certificates here)

67-02
19-22

W 1/2 SECTION 17 T. 4 S. R.

PORTION OF HICKMAN SUBDIVISIO

17-4-11 WOMACK ACRES



54-02

18-62

PORTION S. 1/2 SECTION 6 T. 4 S. R

6-4-10

61

TUOLUMNE RIVER

USM.C.

USM.L.

858'

484.55'

330

VIII

VII

2

78.66 Ac.±

17

38.55 Ac.±

19

29.59 Ac.±

3

9 Ac.±

5-P.M.-134

1142.50'

1083'

HATCH RD.

2048.54'

66'

80'

90'

T.I.D. LAT.

FAITH HOME RD.

GILBERT RD.

39

APPLICATION

CALIFORNIA LAND CONSERVATION ACT OF 1965

STANISLAUS COUNTY

The undersigned hereby requests the County of Stanislaus, California, to enter into the California Land Conservation Contract attached hereto.

The persons who have signed the contract are the only persons with legal and security interests in the subject property.

Each person who has signed the contract is an adult who is not incapacitated to contract, or the signature is by an authorized guardian or conservator.

I declare under penalty of perjury that the foregoing is true and correct and this application was executed on _____, 19 , at _____, California.

Harold O. Miller
Signature of Applicant
(Any owner or designated agent.)

(Application must be sworn to
and signed before a notary
if executed outside California.)

Date January 25, 1977

TO: Board of Supervisors

FROM: Stanislaus County Planning Commission

SUBJECT: Application for Contract--Land Conservation Act

The following application to establish an Open Space Contract, as provided by the Land Conservation Act of 1965, has been received and is found to comply in all respects with the requirements of the Uniform Rules adopted and recorded by your Board:

CONTRACT NO. 77-2803

ASSESSOR PARCEL NO.	67-02 19-2215-002	11124 E. Whitmore Ave.
	54-02 18-6202-002	4243 E. Hatch Rd.

School District

Applicant Harold & Marjorie Miller Or Agent

Address 4243 E. Hatch Rd.

Modesto 95351

Total Acres Applied for 98.49 Zoning A-2

Supervisorial District 2

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Appendix E: FHWA & FTA California 2021 FSTIP Approval

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Federal Highway Administration
California Division Office
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814-4708
(916) 498-5001

Federal Transit Administration
Region IX Office
90 Seventh Street, Suite 15-300
San Francisco, CA 94103-6701
(415) 734-9490

April 16, 2021

ELECTRONIC CORRESPONDENCE ONLY

Mr. Toks Omishakin, Director
Office of the Director, M.S. 49
California Department of Transportation
1120 N Street
Sacramento, CA 95814

SUBJECT: California 2021 FSTIP Approval

Dear Mr. Omishakin:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our reviews of the 2021 Federal Statewide Transportation Improvement Program (FSTIP), which was submitted by your letter dated April 1, 2021. As detailed in your letter enclosed, the 2021 FSTIP incorporates by reference the following metropolitan planning organizations' (MPO) Federal Transportation Improvement Programs (FTIP):

- Association of Monterey Bay Area Governments (AMBAG)
- Butte County Association of Governments (BCAG)
- Fresno Council of Governments (FresnoCOG)
- Kern Council of Governments (KCOG)
- Kings County Association of Governments (KCAG)
- Madera County Transportation Commission (Madera CTC)
- Merced County Association of Governments (MCAG)
- Metropolitan Transportation Commission (MTC)
- Sacramento Area Council of Governments (SACOG)
- San Diego Association of Governments (SANDAG)
- San Joaquin Council of Governments (SJCOG)
- San Luis Obispo Council of Governments (SLOCOG)
- Santa Barbara County Association of Governments (SBCAG)
- Shasta County Regional Transportation Planning Agency (SCRTPA)
- Southern California Association of Governments (SCAG)
- Stanislaus Council of Governments (StanCOG)

- Tahoe Metropolitan Planning Organization (TMPO)
- Tulare County Association of Governments (TCAG)

We find that the FSTIP and FTIPs, were developed through a continuing, cooperative, and comprehensive transportation planning process in accordance with the metropolitan planning provisions of 23 U.S.C. 134 and 49 U.S.C. Chapter 53 as amended by Public Law 114-94, the Fixing America's Surface Transportation (FAST) Act.

The United States Environmental Protection Agency (EPA) has designated the following planning areas as Nonattainment or Maintenance Areas for Criteria Pollutants:

- Butte County Association of Governments (BCAG)
- Fresno Council of Governments (FresnoCOG)
- Kern Council of Governments (KCOG)
- Kings County Association of Governments (KCAG)
- Madera County Transportation Commission (Madera CTC)
- Merced County Association of Governments (MCAG)
- Metropolitan Transportation Commission (MTC)
- Sacramento Area Council of Governments (SACOG)
- San Diego Association of Governments (SANDAG)
- San Joaquin Council of Governments (SJCOG)
- San Luis Obispo Council of Governments (SLOCOG)
- Southern California Association of Governments (SCAG)
- Stanislaus Council of Governments (StanCOG)
- Tulare County Association of Governments (TCAG)

As such, the above MPOs Policy Boards have made an initial conformity determination on the above FTIPs and associated Regional Transportation Plan (RTP) amendments, as applicable, before your letter dated April 1, 2021. The FHWA and FTA have reviewed the conformity determinations and find that the FTIPs, the associated RTP amendments, and associated conformity determinations conform to the applicable state implementation plan (SIP) in accordance with the provisions of 40 CFR Parts 51 and 93. This finding has been coordinated with Region IX of the EPA pursuant to the Transportation Conformity Rule.

Based on our review of the information provided and our ongoing oversight of the statewide and metropolitan transportation planning processes, the FHWA and FTA are approving the 2021 FSTIP. This approval is effective April 16, 2021. This approval is given with the understanding that an eligibility determination of individual projects for funding must be met, and the applicant must ensure the satisfaction of all administrative and statutory requirements.

Included with this approval is FHWA and FTA's Federal Planning Finding (FPF). FHWA and FTA are required under 23 CFR 450.220(b) to document and issue an FPF in conjunction with the approval of the FSTIP. At a minimum, the FPF verifies that the development of the FSTIP is consistent with the provisions of both the Statewide and Metropolitan transportation planning requirements. Furthermore, the FPF documents FHWA and FTA's recommendations for statewide and metropolitan transportation planning improvements.

If you have questions or need additional information concerning our approval and the FPF, please contact Mr. Antonio Johnson of the FHWA California Division at (916) 498-5889, or by email at antonio.johnson@dot.gov, or Mr. Ted Matley of the FTA Region 9 Office at (415) 734-9468, or by email at ted.matley@dot.gov.

Sincerely,

VINCENT PAUL MAMMANO

Digitally signed by VINCENT PAUL MAMMANO
Date: 2021.04.15 08:41:42 -07'00'

Vince Mammano
Division Administrator

Sincerely,

RAYMOND S TELLIS

Ray Tellis
Regional Administrator

U.S. Department of Transportation

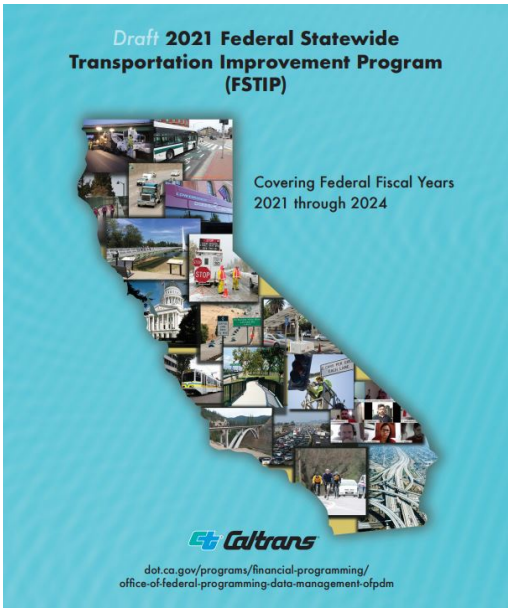
Federal Highway Administration

Federal Planning Finding

FHWA, California Division
FTA, Region IX

2021 Federal State Transportation Improvement Program

April 15, 2021



FINAL REPORT

U.S. Department of Transportation
Federal Highway Administration

The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) are required under 23 CFR 450.220(b) to document and issue a Federal Planning Finding in conjunction with the approval of the Federal Statewide Transportation Improvement Program (FSTIP). The Federal Planning Finding verifies, at a minimum, that the development of the FSTIP is consistent with the provisions of both the Statewide and Metropolitan transportation planning requirements of 23 U.S.C. 134, 135; 49 U.S.C. 5303-5305; 23 CFR parts 450 and 500, and 49 CFR part 613. This report substantiates the issuance of the FHWA/FTA Federal Planning Finding (FPF) to support FHWA/FTA approval of the FSTIP based on the review of FSTIP and FTIP documents, statewide and metropolitan planning self-certification statements (23 CFR 450.220; 23 CFR 450.336), and related supporting documentation.

The FPF is one part of the risk-based stewardship and oversight the FHWA and FTA conduct for Caltrans, the Metropolitan Planning Organizations (MPOs), and planning partners. The FPF serves as a "tool" for FHWA and FTA to support improvements to the planning process and ensure that Caltrans, the MPOs, and planning partners comply with Federal laws and regulations. The FPF ties the statewide, metropolitan, and non-metropolitan planning processes together into one formal risk-based action.

To determine if Caltrans transportation planning and programming processes substantially meet the Federal requirements, FHWA and FTA reviewed the following:

- 2018 California FSTIP FPF;
- 2019 and 2020 Transportation Management Area Certification Reviews Reports;
- California Division Planning and Air Quality Program Analysis and Risk Assessments for Years 2019, 2020, and 2021;
- And additional guidance received from the FHWA Office of Planning.

Based on the above, FHWA and FTA find that California's statewide and metropolitan planning process substantially meets the Federal requirements. FHWA and FTA also finds that some improvements are warranted to ensure continued compliance with the Federal requirements and therefore are issuing the following Corrective Actions and recommendations:

Corrective Action - CMAQ and STBG programs administration and oversite

During the calendar year 2020, FHWA and FTA conducted three TMA Certification Reviews (Reviews). Two of the three Reviews found that the MPOs were sub-allocating the urbanized areas apportionments of STBG based on population and/or mode. On April 4, 2016, FHWA published "Sub-allocation of Apportioned Funds Questions and Answers." Question five asks, **"In developing an FTIP, can an MPO sub-allocate its STBG to individual jurisdictions or a specific transportation mode?" Answer five states, "**As a general matter, no. Procedures or agreements that distribute sub-allocated STBG funds to individual jurisdictions or modes *within the Metropolitan Planning Area* by pre-determined percentages or formulas are inconsistent with

the legislative provisions that require the MPO, in cooperation with the State and the public transportation operator, to develop a prioritized and financially constrained TIP."

The reviews also found that two MPOs had delegated CMAQ project selection authority to county transportation agencies. Per the Interim Program Guidance Section IX(A) Project Selection (https://www.fhwa.dot.gov/environment/air_quality/cmaq/policy_and_guidance/2013_guidance/), only the State DOT and the MPO have project selection authority. Due to the county transportation agencies' CMAQ project selection processes, the Reviews found that projects were being selected before the required assessments of proposed projects' expected emission reduction benefits. Furthermore, a review of the proposed FTIPs found that another MPO was similarly sub-allocating STBG funds.

Caltrans is the primary recipient of the STBG and CMAQ programs apportionments. As such, Caltrans is required to ensure that Caltrans's sub-recipients are administering CMAQ and STBG funds per the applicable federal-aid program requirements. Caltrans shall review the DOT's CMAQ and STBG administrative policies, update the policies and procedures if warranted, and ensure and/or develop a process for ensuring the sub-recipients are administering the programs in compliance with Federal program guidance and regulations.

Recommendation - Periodic evaluation of facilities repeatedly requiring repair and reconstruction due to emergency events

Per 23 CFR 667, Caltrans is required to conduct statewide evaluations to determine if there are reasonable alternatives to all roads, highways, and bridges that have required repair and reconstruction activities on two or more occasions due to emergency events. The evaluations shall be completed prior to any affected portion of a road, highway, or bridge project being included in the FSTIP.

Several Divisions within Caltrans are responsible for documenting damages to the NHS caused by emergency events and the associated repairs and sustainability activities including conducting an evaluation. However, the evaluation and supporting documentation was not included in the 2018 California FSTIP and associated FTIPs and was not included in the 2021 California FSTIP and associated FTIPs. Failure to include the evaluation in the 2023 California FSTIP is likely to result in the issuing of a Corrective Action and/or non-approval of the FSTIP. Caltrans and the MPOs are encouraged to include consideration of the evaluations during the development of transportation plans and programs, including the 2023 California FSTIP and FTIPs.

Recommendation - Performance-Based Planning and Programming (PBPP) and Transportation Performance Management (TPM) Implementation

Caltrans, in coordination with the MPOs, has implemented a performance-based planning and programming process as required by 23 CFR 450. Also, Caltrans, in coordination with the MPOs, have established performance targets, reported the established targets, and continues to

monitor and report on progress toward achieving the performance targets. Despite completing the requirements, challenges persist in the coordination of data. Caltrans and the MPOs have established agreements that reference PBPP and TPMs; however, the agreements do not define the type of data needed for the California asset management plan and the information needed to satisfy the TPM reporting requirements.

FHWA and FTA recommend that Caltrans and the MPOs jointly agree upon and develop specific written provisions for cooperatively developing and sharing information related to transportation performance data, the selection of performance targets, the reporting of performance targets, the reporting of performance to be used in tracking progress toward attainment of critical outcomes for the region of the MPO (see §450.306(d)), and the collection of data for the State asset management plan for the NHS. This agreement shall be documented either as part of the metropolitan planning agreements, or documented in some other means outside of the metropolitan planning agreements as determined cooperatively by Caltrans and the MPOs.

Recommendation – Regional Transportation Conformity

FHWA/FTA makes conformity determinations. MPO policy boards make initial conformity determinations for the Regional Transportation Plan - Sustainable Communities Strategies (RTP-SCSs) and FTIPs in areas that either does not meet or previously have not met national ambient air quality standards (NAAQS) for ozone (O3), carbon monoxide (CO), particulate matter (PM10 and PM2.5), or nitrogen dioxide (NO2). These areas are known as “nonattainment areas” and “maintenance areas,” respectively. The State DOT, through the Self-Certification, certifies that the statewide and metropolitan transportation planning process is being carried out in accordance with sections 174 and 176(c) and (d) of the Clean Air Act, as amended (42 U.S.C. 7504, 7506(c) and (d)) and 40 CFR part 93. The Caltrans Air Quality, Environment, and Health Branch reviews the MPOs' transportation conformity analyses and supporting documentation and provided comments for improvements when necessary. Caltrans Office of Federal Programming and Data Management is responsible for developing and managing the FSTIP, including providing the Self-Certification to FHWA and FTA.

Historically, the regional transportation conformity process for the FTIPs and FSTIP and the review and approval of the FTIPs and FSTIP have been conducted as two separate processes. Conducting two different reviews for each FTIP and FSTIP update and amendment has caused delays in approval, inefficient communication, and a lack of documentation to justify FSTIP/FTIP amendments' approval. FHWA and FTA recommend that Caltrans develop a process to integrate the Air Quality, Environment, and Health Branch into the FSTIP/FTIP review process before Caltrans requests FHWA/FTA FSTIP or associated amendments approvals. FHWA and FTA also recommend that the updated process includes Caltrans providing the conformity analysis and their concurrence as part of the request for approval. Failure to integrate the Air Quality, Environment, and Health Branch into the process may result in FHWA and FTA determination that Caltrans has not satisfied the Self-Certification requirements.

If you have questions or need additional information concerning the FPF, please contact Ted Matley of the FTA Region IX at (415) 734-9468, or Ted.Matley@dot.gov, or Antonio Johnson of the FHWA California Division office at (916) 498-5889 or Antonio.Johnson@dot.gov.

U.S. Department
of Transportation

Federal Highway Administration

Report prepared by:

FHWA California Division Office
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
Phone: (916) 498-5001
FAX: (916) 498-5008

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List of Technical Studies

Many technical studies were used to analyze the impacts of the proposed Build Alternative and the No Build Alternative and they are summarized in the Draft Initial Study/Environmental Assessment (IS/EA). These studies include:

- Air Quality Report February 2021
- Aquatic Resources Delineation Report December 2019
- Archeological Survey Report April 2020
- Biological Assessment June 2020
- Community Impact Assessment May 2020
- Final Drainage Impact Study Report November 2018
- Floodplain Evaluation Report September 2019
- Historic Property Survey Report April 2020
- Historic Resource Evaluation Report April 2020
- Initial Site Assessment October 2019
- Location Hydraulic Study September 2019
- Natural Environment Study March 2020
- Noise Study Report April 2020
- Paleontological Identification Report and Paleontological Evaluation Report August 2019
- Preliminary Foundation Report October 2018
- Preliminary Site Investigation-Aerially Deposited Lead Study October 2019
- Stormwater Control Plan April 2019
- Summary Floodplain Report September 2019
- Transportation Analysis Report May 2020
- Visual Impact Assessment Report April 2020
- Water Quality Assessment Report September 2019